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The Mississippi Doctor

Official Organ
of the
Mississippi State Medical Association
and the
Mid-South Postgraduate Medical Assembly

W. H. ANDERSON, M.D., Editor-in-Chief
MILDRED P. ANDERSON, Assistant Editor

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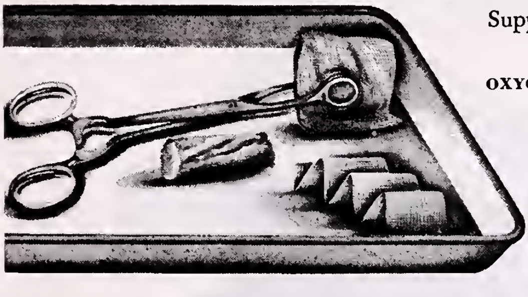

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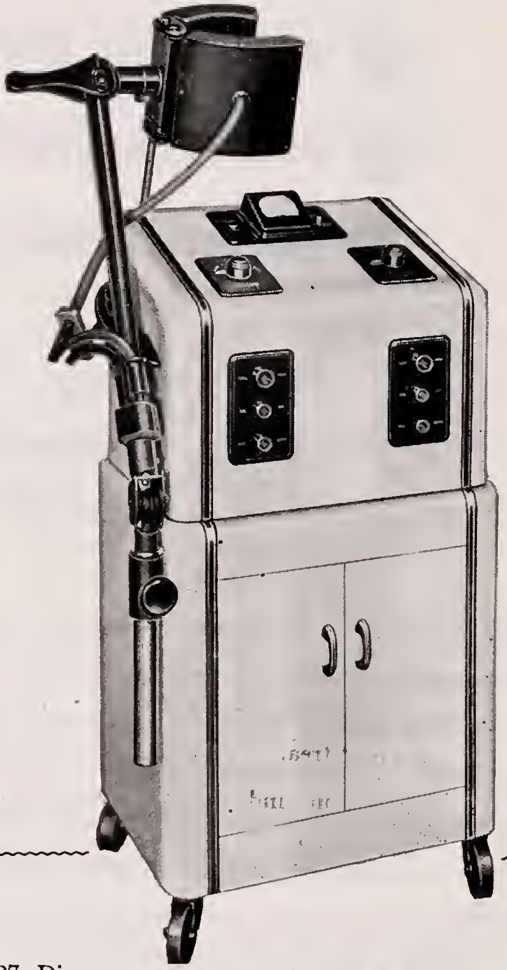

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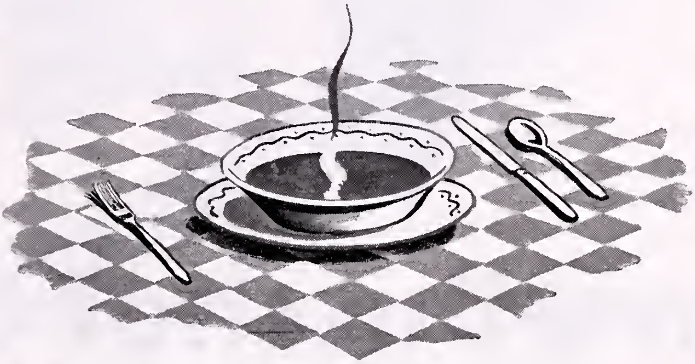

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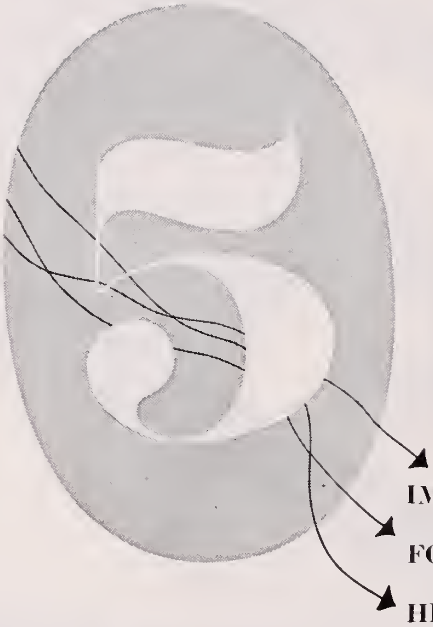

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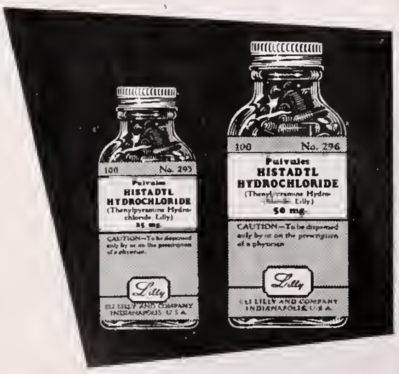
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Recent Advances in Cardiology*

ARLIE R. BARNES, M. D.
Division of Medicine, Mayo Clinic,
Rochester, Minnesota

IT IS EASY to become pessimistic about the problem of heart disease. The prevalence and the toll of hypertension are well known to medical men, and it must be admitted that no satisfactory solution of this problem is at hand. The percentage of the population that is fifty years of age or older has been rising steadily, and will continue to do so for years to come. The appalling number of deaths from disease of the coronary arteries which we observe now may be expected to increase as aging of the population increases. We know neither the cause nor the cure of rheumatic fever, which accounts for more deaths among children than any other disease.

But even the dismal outlook of these forms of heart disease is tempered by a few hopeful developments. The study of the prognosis of angina pectoris, made by White and his associates, indicates that many of the people thus afflicted survive much longer than we had supposed. With modern methods of management, the mortality rate among patients suffering from acute myocardial infarction appears to be much less than it was formerly. And while we lack a satisfactory method of treating rheumatic fever, there is considerable evidence that the daily administration of a small dose of sulfadiazine greatly diminishes the chances that a child will have dreaded recurrences of the disease.

However, there are other reasons for optimism. Brilliant advances in the diagnosis and in the surgical treatment of congenital heart disease have been made in the past three years. We have better tools and a better understanding of the problem of treating congestive heart failure than we formerly had. We are making some progress toward the development of more objective measurements indicative of insufficiency of the coronary circulation. Subacute bacterial endocarditis, previously considered to be incurable, now, in most instances, yields to treatment with penicillin. The hazard of thrombo-embolism has been reduced in great measure by anticoagulant therapy or by ligation of the femoral veins. Patients suffering from constrictive pericarditis can be restored to approximately normal health in 75 per cent of the cases by epicardiolysis. It is worth while to consider these various advances in greater detail.

ADVANCES IN THE INVESTIGATION OF DISTURBANCES OF CARDIAC FUNCTION

We have been indoctrinated in the concept that heart failure is due to back pressure from a failing heart. According to this thesis, cardiac failure is the primary event from which increased venous pressure, elevated capillary hydrostatic pressure and edema follow in sequence. Recently, Warren and Stead[2] have challenged this explanation of heart failure. They precipitated the development of edema in patients who had recovered from previous congestive failure by adding excess salt to their diets. Under these circumstances, the patients gained weight, the total volume of plasma increased, there was an initial decrease in the concentration of plasma proteins, the hematocrit determination showed a decrease and all of these events preceded an increase in the venous pressure. Warren and Stead believed this chain of events to be initiated by a primary decrease in renal function (failure to excrete sodium) due to a decreased cardiac output of a heart that is diseased. They considered that this is the usual mechanism of chronic heart failure, and that it may be regarded as an example of forward failure. This explanation would permit us to understand certain instances of heart failure that occur without elevation of the venous pressure. It focuses our attention on the importance of sodium as a factor precipitating and perpetuating edema. Finally, it emphasizes the fact, frequently neglected, that the successful management of heart failure demands that much of our attention must be given to measures directed chiefly at the improvement of renal function.

Certain congenital lesions of the heart can be identified with a high degree of certainty by ordinary and accepted methods of clinical examination. In this category are patient ductus arteriosus and coarctation of the aorta. The tetralogy of Fallot can be diagnosed with much less certainty. Since these abnormalities often call for surgical intervention, it is essential that the preoperative diagnosis be correct and that we have reliable information about the volume of blood flow through the pulmonary circuit. Several observers,[3-5] including my colleagues, have demonstrated the feasibility of catheterizing the right side of the heart by way of the median basilic vein. In this way, the catheter can be passed into the superior vena cava, the right auricle, the right ventricle and into the inferior vena cava. If an interauricular septal defect is present it is sometimes possible to catheterize the left auricle; if patency of the interventricular septum exists, the left ventricle and sometimes the aorta may be entered by the catheter. In any of the regions entered by the catheter, pressures can be determined by attachment of a suitable manometer to the catheter. Similarly, samples of blood can be withdrawn from the region catheterized, and the oxygen saturation of the blood from a particular region can be determined. If the oxygen saturation of the blood obtained from the right side of the heart and the oxygen saturation of the blood obtained by arterial puncture are determined, and the oxygen consumption of the patient is calculated by the securing of a basal metabolic rate, then the volume of the pulmonary blood flow can be calculated by means of the Fick principle. In a similar manner, it can be determined whether or not dyspnea is produced by faulty absorption of oxygen in the lungs. Finally, data secured by catheterization of the heart may serve to identify the character of a congenital lesion beyond reasonable doubt.

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*Read before the fifty-ninth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., February 11-14, 1947.

TESTS FOR INSUFFICIENCY OF THE CORONARY CIRCULATION

We are dependent largely on our ability to obtain a reliable history of anginal pain in making a diagnosis of insufficiency of the coronary circulation. Our skill in making the diagnosis varies with the ability to obtain a reliable history, on the judgment of the examiner in interpreting the symptoms and on the competence of the patient as a reporter of his experience. In some instances we are handicapped by the fact that some patients are relatively insensitive to pain. But if we recall that the pain of angina pectoris is produced by effort and relieved by rest, that the pain usually has a retrosternal location and that it is of brief duration in the average case, the diagnosis can be made on clinical grounds with a high degree of accuracy. However, there are cases in which the history is equivocal or in which other pains in the chest simulate, in some degree, the pain of angina pectoris. In these latter cases we need a more objective method in reaching a diagnosis.

In recent years a test has been developed that partially satisfies this need. It is based on the concept that the pain of angina pectoris is caused by hypoxemia of the heart muscle, and that if a hypoxemic state of the heart muscle is induced, electrocardiographic changes of diagnostic significance may be produced at that time. In patients who have coronary disease this hypoxemia of the heart muscle may be induced either by approximate exercise[6] or by allowing the patient to breathe a mixture containing 10 per cent oxygen and 90 per cent nitrogen.[7] We[8] have employed the latter method because we felt that our ability to change the inspired air to 100 per cent oxygen instantly gave us greater control of any untoward symptoms. Electrocardiograms are obtained immediately prior to the test and at intervals of ten and twenty minutes after the test has been started. No test is continued longer than twenty minutes. If a significant degree of pain in the chest occurs, a tracing is obtained immediately and the mixture is changed so that the patient breathes 100 per cent oxygen.

We have adopted the criteria of Levy and his associates[7] as to the electrocardiographic abnormalities which may be considered to be indicative of insufficiency of the coronary circulation. The test gave electrocardiographically positive results in 53.2 per cent of our cases in which there was a history suggestive of angina pectoris. It must be emphasized that a negative result of the test does not exclude an inadequate coronary circulation. Results of the test were electrocardiographically positive in 19.5 per cent of the cases in which there was an equivocal history of angina pectoris. Results of the sets were positive in but 1.2 per cent of the cases in which there were few symptoms suggestive of angina pectoris.

When is the test indicated? Certainly there is no occasion to perform the test when a satisfactory diagnosis can be reached in clinical means. The test will be useful chiefly among patients with equivocal symptoms or among patients as to whose condition there has been disagreement among various clinicians. If an insurance claim were disputed, a positive result of the test would serve to clarify the controversy.

Levy considered the result of the test positive if, during the test, pain develops which in the judgment of the observer is of diagnostic significance. We have been cautious in attempting to draw conclusions from pain occurring during the test. Pain is a subjective phenomenon and we are seeking objective evidence. Moreover, a full account of the subjective reactions of the patient is available before the anoxia test is undertaken. We think it is significant that pain appeared almost as commonly in the groups of patients whose history was equivocal or in whom there were few if any symptoms indicative of angina pectoris as it did in the group of patients whose symptoms were highly suggestive of angina pectoris.

Unfavorable reactions are encouraged occasionally which require that the test be discontinued and that 100 per cent oxygen be introduced. These reactions include vasovagal reactions characterized by a decrease in blood pressure, slowing of the pulse and, sometimes, the appearance of shock, nausea and vomiting, loss of consciousness, nodal rhythm, and cardiac arrest. To date we have had no deaths after the test, which has been carried out for more than 500 patients. However, the test requires the closest supervision by a physician.

RECENT ADVANCES IN THE THERAPY OF HEART DISEASE

Therapy with digitalis.—It might seem that there is nothing new to be said about the use of digitalis in the therapy of heart disease. It is probably proper to state that any patient who has congestive failure should receive digitalis. The glycoside, digitoxin, possesses advantages over other glycosides of digitalis. Since digitoxin is completely absorbed by the gastrointestinal tract, the dose given orally is essentially the same as that given intravenously. It is feasible to produce the full effect of digitalis within six to ten hours by the oral administration of a single dose of digitoxin averaging 1.2 mg. Nausea and vomiting seldom occur when this amount of the drug is used, whereas the oral administration, in a single dose, of 1.2 gm. of the powdered leaf, which is the amount required to produce the full effect of digitalis, often produces nausea and vomiting arising from local action on the gastro-intestinal tract. On the basis of personal experience, I have seldom found it necessary to digitalize a patient by a single dose of digitalis; such a procedure in fact may produce serious toxic effects in elderly patients.

The complete absorption of digitoxin leaves very little need for the parenteral administration of digitalis. If nausea or vomiting preclude its use orally or if the patient is comatose, administration of digitalis by the intravenous route may be necessary. Preparations suitable for this purpose are digitoxin, digifolin and cedilanid. It is important to bear in mind that the average dose of the latter two preparations which is required to produce a full digitalizing effect when given intravenously is about a fifth as many cat units as are required when these preparations are given orally. When speed of action is imperative, ouabain, which produces its full effect within about two hours, can be given intravenously in a dose of 0.3 mg., to be followed by additional doses of 0.1 mg. given intravenously at intervals of two hours until a full therapeutic effect has been obtained.

Mercurial diuretics.—The use of mercurial diuretics in the treatment of heart failure is anything but new. Recently, however, it is coming to be more generally recognized that these drugs deserve wider utilization. There are many patients in whom congestive heart failure is not adequately controlled by digitalis. This is particularly true of elderly patients in whom symptoms of toxicity develop after the use of such small amounts of digitalis that an amount of the drug adequate to produce effective action cannot be administered. In such cases therapy with mercurial diuretics often is necessary as an adjunct to therapy with digitalis. Moreover, it is coming to be appreciated that one must seek to establish a sort of maintenance dose of mercurial injections. By this we mean that we must establish the frequency at which mercurial preparations must be injected in order to keep the patient approximately free of edema. If the patient weighs himself daily, a gain of a few pounds in two or three days serves as a useful guide to the patient's need for the injection of a mercurial diuretic. In addition, it is not sufficiently appreciated that the sleeplessness or paroxysmal dyspnea observed among patients with failing hearts often can be relieved dramatically by the injection of mercurials, and it may be added that this result can be obtained when pulmonary congestion cannot be demonstrated by physical examination.

Low intake of sodium and liberal intake of water.—At about the turn of this century it was recognized that patients with heart disease excreted sodium poorly and that, nevertheless, the blood sodium did not increase, from which it was inferred that ingested salt contributed to the edema. The later work of Gamble and associates,[12] Peters and Van Slyke[13] and Lashmet[14] showed the fallacy of the restriction of the intake of fluid in cardiac failure and the importance of ingestion of salt in the perpetuation of edema. In spite of this, the practice of restricting the intake of fluid in cardiac failure persisted, and the restriction of ingested salt was carried out halfheartedly.

Renewed interest in this problem was brought about by the challenging work of Schemm,[15] who advocated a program comprised of a very large allowance of water, a sharp restriction of ingested salt, and acid-ash diet and the administration of acid-producing drugs. This over-all program sometimes was supplemented by the administration of mercurial diuretics. Whether all of this program is required is still a subject of dispute. However, there is unmistakable evidence that the restriction of ingested salt to about 1.5 gm. to 2.0 gm. daily and an allowance of fluids up to 3 liters a day "enables one to control edema which cannot be controlled by the usual measures," "diminishes the necessity for frequent use of mercurial diuretics" or "eliminates entirely the need for their use."[16] It should be noted that to secure a diet with such a low content of sodium, the elimination of salt from the bread and butter is required, in addition to the omission of salt, soda or baking powder in the cooking of foods, in the preparation of salads or at the table.

The abuse of recumbency in the treatment of heart disease.[17,18]—It is well known that more blood is returned to the right side of the heart when a patient lies down than when he is sitting upright. Since overloading of the pulmonary circulation further embarrasses a failing left ventricle, recumbency may add to the patient's difficulty. Recumbency lessens the edema of the legs at the expense of increasing edema of the lungs. Waterlogged legs are much less objectionable than lungs oppressed by edema.

In recent years we have become much more alert than formerly to the hazard of pulmonary embolism in the presence of heart failure. Experience has shown that most of these emboli arise from thrombi in the veins of the legs. Immobility of the legs in combination with a sluggish circulation is an important factor predisposing to the development of such venous thrombosis. Experience indicates that in a patient who is permitted to sit up and to exercise his legs thrombosis in the veins of his legs is less likely to develop than it is in a patient who is kept continuously in recumbency.

At any rate, it would seem that any patient suffering from heart failure, who is more dyspneic in recumbency than when sitting in a chair, should be permitted to sit up at least until treatment with other measures renders him relatively comfortable when in the supine position.

Treatment of subacute bacterial endocarditis,—When penicillin was first used in the treatment of subacute bacterial endocarditis, there were so many failures that many clinicians despaired of its usefulness. Further experience has shown that these failures were due, almost entirely, to insufficient doses of penicillin. The experience of Hunter[19] permitted him to state that "the great majority of patients who have streptococcal endocarditis can be cured with sufficiently intensive administration of penicillin."

Early diagnosis is essential. The disease should be suspected in any patient with valvular heart disease who has unexplained fever for a week or more or who exhibits embolic phenomena, splenomegaly or unexplained anemia.

It is useful to establish the sensitivity of the infecting organism in vitro, and in general the dose of penicillin given should be sufficient to maintain a blood level four or five times the concentration that is required for inhibition of the infecting organism in vitro. While a dose of 500,000 to 1,000,000 units daily will suffice in an average case, in the presence of a resistant strain or of relapses, doses up to 20,000,000 units each day may be required to effect a cure. Hunter advised treatment for about three weeks, after which the treatment is stopped for two weeks and blood cultures are made. Hunter found that even though the patient continues to have fever, leukocytosis, an increased sedimentation rate and embolic phenomena, if the blood culture is negative many of such patients turn out eventually to be cured without further treatment with penicillin.

It is generally agreed that it is unwise to administer heparin or dicumarol to these patients in conjunction with penicillin, because these drugs predispose to the occurrence of hemorrhage.

The removal of infected teeth or tonsils from a patient with valvular heart disease or with congenital defects of the heart may lead to the development of bacterial endocarditis. Prophylactic measures to prevent this should always be carried out. Hunter wrote that he was giving sulfadiazine plus 100,000 units of penicillin every three hours for two days, followed by the administration of sulfadiazine alone for several days. It remains to be determined whether this program is adequate.

Anticoagulant therapy.—Thrombo-embolism is a common and serious complication in patients suffering from heart failure or from acute coronary occlusion. Nay and I[20] studied the condition of 100 consecutive patients during their immediate convalescence from acute myocardial infarction. Thrombotic or embolic complications were observed in thirty-seven patients. In four instances such complications were the cause of death, and in eight cases these complications were important factors contributing to the death of the patients. These complicating episodes included a second myocardial infarction (fifteen patients, pulmonary embolism (fourteen patients) and cerebrovascular accidents (eight patients).

Preliminary experience indicates that the routine administration of dicumarol to patients who have had an acute myocardial infarction, markedly diminishes the incidence of thrombo-embolic episodes, and promises to reduce materially the mortality rate of this condition.

The frequency with which embolism and pulmonary infarction complicate the treatment of heart failure is too well known to deserve comment. Since it is agreed generally that these emboli arise from thrombi in the veins of the legs, one school of thought advocates their treatment by ligation of the femoral or iliac veins.[21] In our practice we have felt that we secured equally satisfactory results by treating these patients with dicumarol. We feel that the bilateral ligation of large veins in the lower extremities is not wholly innocuous in its ultimate effects.

Pulmonary embolism is the bête-noire of surgery, and for many years it accounted for 6 per cent of all deaths after operations at the Mayo Clinic. While such a situation is not primarily a cardiac problem, the ultimate survival of a patient who has had an attack of pulmonary embolism depends on the capacity of the heart to withstand the circulatory disturbances which are associated with this event. Fortunately, most fatal attacks of pulmonary embolism are preceded by nonfatal attacks which can be recognized if the clinician and surgeons are on the alert. If treatment with heparin and dicumarol is begun immediately after a minor attack of pulmonary embolism, fatal attacks can be prevented almost entirely.[22] Moreover, the prophylactic use of dicumarol, beginning on the third postoperative day, has been extremely effective in preventing the occurrence of thrombo-embolism after surgery. Here, again, there are those who advocate bilateral ligation of the large veins in the legs after a minor attack of pulmonary embolism, in order to forestall a fatal attack.

Time will not permit a detailed account of the minutiae of administration of dicumarol, the contraindications to its use and the methods for the control of bleeding, should such occur. It is sufficient to say that the administration of dicumarol must be controlled meticulously by daily determinations of the prothrombin time as outlined by Barker and others.

RECENT ADVANCES IN THE SURGICAL TREATMENT OF HEART DISEASE

Surgical closure of patent ductus arteriosus.—The first successful closure of a patent ductus arteriosus by Gross, although not exactly new, is of recent date (1939).[23] But since that time, Shapiro[24] has obtained the results of surgical intervention for this congenital abnormality in 643 cases. The essential diagnostic signs have become clearly delineated, and in doubtful cases it has been shown that catheterization of the heart may establish the diagnosis beyond all reasonable doubt.

Shapiro found that the combined mortality rate of ligation of an uninfected duct was 4.9 per cent in the hands of numerous surgeons. When the operation was performed in the presence of endarteritis of the duct, the mortality rate was 28.4 per cent. Recanalization of the duct occurred in 8.7 per cent of the cases in which the ducts were uninfected. Preliminary reports indicate that section of the duct, when this is possible, carries no greater risk than ligation so that section of the duct rather than ligation should be carried out whenever feasible.

It is generally agreed that operation for patent ductus arteriosus, is indicated when the condition is uncompensated as evidenced by lowered diastolic pressure, high pulse pressure and collapsing pulse, an enlarging heart or symptoms of increasing dyspnea or both, and in the presence of subacute bacterial endarteritis. Shapiro wrote that the disadvantages of postponing surgery until treatment of subacute bacterial endarteritis has been given a trial outweigh the advantages, and he advised immediate operation in these cases.

In cases of compensated patent ductus arteriosus in which the diastolic pressure is normal or only slightly reduced, in which there is little or no cardiac hypertrophy and in which there are no peripheral signs of edema, there is less agreement about the advisability of surgical intervention. Shapiro said that all children whose condition is in this category should undergo operation for closure of the patent ductus. It is difficult to defend a policy of noninterference in these cases, in view of the low mortality of surgery in good hands and the fact that a patient ductus arteriosus reduces the life expectancy of a child by twenty-three to twenty-eight years.[25] This is especially true when the fact that three surgeons have operated on 172 patients who had uninfected ducts, without a single fatality is considered.

Surgical treatment for coarctation of the aorta.—The prognosis of the adult type of coarctation of the aorta has been studied by Reifenstein, Levine and Gross.[26] They found one group in which the patients had attained elderly life, had only minor complaints and have had a reasonably satisfactory life. The patients in a second group succumbed to a superimposed subacute bacterial infection. In a third group sudden death occurred from rupture of the aorta. In a fourth group, death occurred from cardiac decompensation or from intracranial hemorrhage. In general, although some individuals enjoy a long life, the prognosis usually is very poor beyond the ages of twenty-five to thirty years.

Gross[27] in this country and Crafoord and Nylin[28] in Sweden have demonstrated the feasibility of the surgical treatment of coarctation of the aorta. Gross has operated on fourteen patients for this condition, with two deaths. In one a satisfactory anastomosis could not be obtained, but the patient survived the operation without any significant change in his hypertensive state. In the remaining eleven cases the results of the operation were very satisfactory, with the restoration of normal pulsations and pressures in the arteries of the legs and with complete relief of hypertension in the upper part of the body.

It should be added that Gross[27] considered that "optimal ages for performance of this operation lie between six and twenty years." Beyond the age of twenty-five arteriosclerosis "makes the aorta a poor vessel for manipulation and suture." It is obvious that the early identification of coarctation of the aorta offers the patient the best chance for surgical treatment, and hence for survival.

The surgical treatment of congenital pulmonic stenosis.—In May, 1945, Blalock and Taussig,[29] in an outstanding report, described the first successful operation for the relief of pulmonary stenosis. They stated that the operation was indicated for congenital heart lesions producing cyanosis when there was clinical and roentgenographic evidence of an inadequate flow of blood through the lungs. The evidence for this rests on "the absence of visible pulsations in the lung fields as observed under the fluoroscope and roentgenographic evidence that the pulmonary artery is small in size." When a patient is of sufficient age that catheterization of the heart by the venous route is feasible, the procedure may yield information which not only confirms the diagnosis, but also establishes the volume of the pulmonary blood flow. In any event, if the diagnosis is doubtful in a child with marked cyanosis, and if the prognosis for the patient is considered hopeless, Blalock and Taussig wrote, exploration is justified. When the pulmonary artery is exposed, the pressure in the artery can be measured by a water manometer attached to a needle which is inserted into the pulmonary artery. These observers considered operation inadvisable if the pressure in the pulmonary artery is greater than 300 mm. of water.

Blalock and Taussig wrote that the operation for congenital heart lesions producing cyanosis is beneficial in: (1) tetralogy of Fallot, (2) pulmonary atresia with or without dextroposition of the aorta with or without defective development of the right ventricle, (3, truncus arteriosus with bronchial arteries, and (4) a single ventricle with a rudimentary outlet chamber in which the pulmonary artery is diminutive.

The operation has been performed on an infant of five months and on an adult twenty-one years of age. When the surgeon is offered a choice, the innominate artery is the preferable one to use for the anastomosis. It is usually possible to determine before operation whether the innominate artery is on the left or the right side, and the approach through the chest should be made on the side in which this artery is located.

Blalock[30] has reported operation on 110 patients for congenital pulmonic stenosis, with an over-all mortality rate of 23 per cent. In some of these patients the operation consisted of exploration, and anastomosis was not performed.

The operation results in a decrease in cyanosis, and clubbing of the fingers and toes diminishes after a period. The tolerance of these children to exercise is increased greatly, and in some instances they can engage in fairly strenuous exercise.

The surgical treatment of chronic constrictive pericarditis.—Surgical intervention for chronic constrictive pericarditis is not new, but sufficient time has elapsed since patients have undergone epicardiolysis to permit an evaluation of the procedure. Harrington[31] has reported a mortality rate of 25 per cent among patients for whom epicardiolysis was performed. This is recognized as relatively high, but not unduly so when the dismal outlook for these patients without surgical intervention is remembered. This mortality rate will be reduced as the condition is recognized earlier and as physicians learn to recognize and reject for surgery those patients who have an active inflammatory process in the pericardium.

The condition of nine patients was followed for an average of just less than three years, and the patients were considered to be cured. By "cure" is meant a relief of subjective symptoms and the restoration of the patient to his former or some useful occupation. The actual damage to the heart probably is not relieved entirely, and it remains to be seen whether the life expectancy of these patients will be normal. This group comprised 46 per cent of the patients operated on in one series. It is believed that two more patients will come into this group, thus raising the percentage of "cures" to 54 per cent.

The condition of an additional thirteen patients has been followed for periods ranging from three months to six and a half years after epicardiolysis. They have shown definite and often marked improvement. We feel that many of these patients eventually will be classified as "cured," inasmuch as improvement of the cardiac function requires two or more years to reach its maximum.

The relief of hyperthyroidism in the treatment of heart disease.—This paper should not close without the reminder that spectacular relief of heart failure follows the relief of hyperthyroidism. Usually, thyroidectomy is the treatment of choice for patients who have heart failure and hyperthyroidism. However, when the risk of surgery is considered to be excessive, suitable alternative methods of treatment with thiouracil or radioiodine are available. The cardiologist must forever be on the alert for hyperthyroidism, either in the form of exophthalmic goiter or nodular goiter, which so often is masked by congestive heart failure, because appropriate treatment under these circumstances affords some of the most gratifying and dramatic results that the physician ever sees.

COMMENT

From the foregoing considerations I think you will agree that the dismal outlook for the cure or prevention of certain forms of heart disease voiced at the outset is mitigated materially by the evidence of brilliant progress in treatment. These advances are most heartening and augur well for continued progress in the conquest of mankind's greatest hazard to life and health.

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When two hundred consecutive autopsies were done in a general hospital which does not knowingly admit tuberculous patients, 41 cases of tuberculosis of all types were found. Of the 41 cases, 31 died of causes other than tuberculosis, and the patients as well as the physician were completely unaware of the disease. In view of the high incidence of undetected tuberculosis, the conclusion is that no patient should be admitted to a general hospital without x-ray examination of the chest. A. dePaula, Prensa Med. Argent., Abst., Am. Rev. Tbc.,

Management of Congestive Heart Failure
Role of Diuretics*

C. Ray Thorpe, M. D.

In the management of congestive heart failure, one is handicapped by a lack of knowledge of the mechanisms by which the heart fails. By the time the patient has developed symptoms of heart failure, a series of events have already occurred which resulted in an increase in the volume of extracellular fluid. The signs and symptoms we recognize as indicative of congestive heart failure result from this increased extracelluar fluid.

The mechanism of heart failure need not concern us here other than indicating the following facts:

1. The initiating factor of the syndrome of heart failure is in the heart.
2. When first seen the patient has acquired all of the fluid and electrolyte through the gastro-intestinal tract.
3. The renal excretion of salt and water has lagged behind the intake. In other words, the patient was in positive salt balance and therefore in positive water balance since electrolyte retained in the body must be maintained at isotonicity.

This positive salt balance may result from failure of the heart to maintain adequate renal blood flow and thus fail to filter enough salt into the glomerular filtrate. There is good evidence that when the cardiac output is relatively low or fixed, the renal blood flow is reduced out of proportion to the reduction in cardiac output. The kidney suffers more than the remainder of the body. As will be indicated later, the rationale of rest in the therapeutic regimen is based in part on this. Another and probably more important mechanism is the amount of sodium reabsorbed by the renal tubules. This may be increased with either normal or reduced glomerular filtration. In either instance the body would be in positive sodium and water balance with a resultant increase in the extracellular and probably intracellular fluid compartments.

The therapy of congestive failure may be directed toward the heart primarily, body fluids primarily or preferably both in certain cases. In certain instances, therapy directed toward the heart is best. These instances constitute the group of reversible heart diseases, such as thyrotoxicosis, myxedema, anemia, nutritional heart disease. In other instances in which the heart does not fill adequately either from tachycardia or obstruction as in pericarditis, the attack should be directed toward the primary defect.

In the case of anemia, reëstablishing the normal level of hemoglobin is the specific therapy. The role of anemia in the aggravation of the failure of other types of heart disease should not be under-estimated. In chronic glomerulonephritis with uremia and acidosis in addition to heart failure, the treatment aimed at correction of the uremia and acidosis aggravates the heart failure and vice versa. In such instances, correction of the anemia by small transfusions may be the most helpful therapeutic measure available.

In the persistent tachycardias the disastolic filling of the heart is at fault. Correction of the mechanismal disturbance with subsequent lengthening of disastole is the aim of treatment. In the case of ventricular tachycardia, quinidine is the only useful drug. In the paroxysmal supraventricular tachycardias, reflex vagal stimulation and quinidine are effective. In auricular fibrillation the ventricular rate is controlled by digitalis. Auricular flutter is particularly likely to result in congestive failure since this mechanism may last for weeks. Digitalis is the drug of choice though quinidine may be effective.

The greater proportion of patients with congestive heart failure do not fall in the group of reversible heart disease. In the chronic valvular diseases, hypertension, coronary artery disease, etc., the heart has failed in its efficiency as a pump. Here the therapy is best directed at both the heart and the reduction of the body fluid compartments. Digitalis is the best known method of increasing the efficiency of the heart and full therapeutic doses are indicated in all cases of congestive heart failure, both acute and chronic. There are many varieties available, powdered leaf, digoxin, digitoxin, cedilanid, etc. There are many points in favor of the use of a crystalline product which is standardized by weight, but the important thing is complete familiarity with any one product. Any one gives as satisfactory a result as the others. The dose of digitalis, as you know, varies among patients.

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Personally, I like to approach the "tolerance" gradually when time is adequate. It is better to under-digitalize slightly than to add digitalis intoxication with its disturbances in mechanisms to an already sick individual. This brings up the question of increasing the dose "up to tolerance" in a patient who has been maintained on an average maintenance dose. Only rarely is this likely to help and rather frequently the patient is made worse.

The role of oxygen and morphine in the dyspneic patient should not be overlooked.

There are many drugs which are supposed to increase coronary artery blood flow and thus improve the efficiency of the heart. The various xanthines, theobromine, aminophyllin, etc., are in widespread use, but the role played by these drugs is questionable. There are no known drugs which dilate the coronary arteries alone. Generalized vasodilatation is possible, but in so doing, the coronary artery flow is reduced in relation to the amount of work to be done. If, however, there is a pulmonary element in the dyspnea, they may afford some benefit, but continued administration results in a development of tolerance just as to caffeine.

In addition to an attempt to improve the efficiency of the heart, the so-called load of minimum amount of work may be reduced. Rest serves not only to reduce the total amount of work done, but also to increase the renal blood flow. In the mild cases of failure, rest alone may suffice to rid the patient of his dyspnea and edema, but on resumption of rest or inactivity the symptoms recur. The degree of inactivity is determined by the severity of the failure. Ambulatory patients can very well regulate their own activity. An increase in weight or fatigue indicates a further reduction in activity. Serial determinations of venous pressure are valuable in the regulation of activity; a rise indicating further restriction is necessary.

In addition to the efforts at increasing the efficiency of the heart and rendering the demand for work, another very important method of treatment is in reducing the amount of extracellular fluids. This can be done secondarily by increasing the output of the heart and indeed, digitalization may be followed by a diuresis. The excess fluid and electrolyte accumulates in the body because renal excretion of sodium and water lags behind intake. Available evidence indicates that excretion of the sodium ion is at fault in congestive failure. When sodium is retained by the body, water is also held to maintain isotonicity. To prevent further accumulation, sodium is restricted. The extent of sodium restriction necessarily depends on the degree of failure. For those in mild failure, a sodium intake of 5 Gms. may be low enough to allow renal excretion to exceed intake. In mild failure sodium restriction alone may suffice. In more severe failure more rigid restriction of sodium is necessary as well as methods to rid the body of its accumulated sodium. Certain diuretics are available which act as sodium diuretics.

Water is diuretic. The forcing of large amounts of water in the presence of a low sodium intake may result in an improvement, but this method is so cumbersome and unpleasant that it is not practical or effective.

Aminophyllin and various other xanthines have been shown to increase glomerular filtration. The amount of drug required to result in a diuresis is frequently too large to be tolerated. It is indeed a weak diuretic in congestive failure.

Ammonium chloride and other acid-producing salts act as diuretics. The body is presented with an excess of chloride to be excreted. Some of the chloride carries sodium with it into the urine. The ammonia is converted to urea which is itself a diuretic. The amount of ammonium chloride necessary to accomplish this is frequently too large to be tolerated without nausea. Ammonium chloride is a weak diuretic and never justifies causing anorexia and vomiting. Ammonium chloride is best used for its potentiating effect on mercurial diuretics. It increases the diuretic action of the mercurials by from 15 to 20 per cent. This is seldom necessary. Continued administration of ammonium chloride may result in acidosis by the increase in chloride alone. If it is used in association with mercurials, it should be given in doses of 6-8 gms. per day for three or four days prior to the mercurial.

Mercurial diuretics by their action on the renal tubules serve as excellent sodium diuretics. The exact mechanism by which the tubular reabsorption of sodium is reduced is unknown. Glomerular filtration is unchanged. Following a mercurial diuretic the excretion of sodium is out of proportion to the amount of water excreted, thus it is primarily a sodium diuretic. The excretion of sodium results in a reduction of extracellular fluid volume, venous pressure and symptoms of congestive failure. We have then an excellent adjunct in the treatment of congestive heart failure.

The question arises as to dosage, toxicity, and contra-indications. It is well to use one cc. initially and if a satisfactory response is obtained continue at that dosage. If one fails to obtain a response to one cc. then increase to two cc. Initially the dose may be repeated every other day or daily if the failure continues, a maintenance dosage of mercurials is established as for digitalis. The minimum amount needed to maintain normal or dry weight, venous pressure and prevent dyspnea and edema is the maintenance dose. This may vary widely; from one cc. monthly to two cc. three times a week.

The response is about the same whether given intramuscularly or intravenously. The objection to intramuscular use has been the local reaction . In this respect mercuhydrin seems to be tolerated better than the others.

The only contraindiction to the use of mercurial diuretics is kidney disease. It is very difficult to be certain of kidney disease in the presence of heart failure. Hematuria, casts, albumen, reduced P. S. P. excretion and elevated blood urea nitrogen are frequent in congestive heart failure with structurally normal kidneys. To withhold mercurials in the presence of these findings would deprive many patients of a much needed drug. On the other hand, these urinary findings may be present in kidney disease so it becomes a calculated risk. Blood urea nitrogen may be elevated as high as 60 mgm. in congestive heart failure alone. If this value is over 70 mgm., mercurials should not be used.

The undesirable reactions to mercurials may be either immediate or delayed. The immediate reactions follow intravenous administration and consist of arrythmia, nausea, vomiting, tachycardia and rarely syncope. There are a few immediate deaths reported from intravenous mercurials. Sudden deaths in cardiac patients are very difficult to evaluate. By slow intravenous administration or intramuscular injections in those who have premature beats and other evidences of mercury sensitization, these reactions can be avoided. I could find no reported case of death from intramuscular injection.

The important late reaction consists of a syndrome which results from too much sodium depletion. Since sodium is excreted in excess of water, there may result from too frequent administration a symptom complex consisting of apathy, stupor and coma. The occurrence of such a syndrome in the course of rigorous mercurial diuresis necessitates administration of saline. The result is as dramatic as giving glucose in insulin shock.

In summary, we may attack the problem of congestive heart failure by measures designed to improve the efficiency of the heart by measures which control the amount of extracellular fluid. The latter results in the signs and symptoms of the clinical picture of congestive heart failure. By controlling the sodium intake and increasing the excretion of sodium by diuretics, the symptoms may be controlled without primarily influencing the state of the heart.

The Passing of the Old Time Rural Family Doctor

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Progress has been the keynote of the human race since the dawn of civilization, and the medical profession, always cognizant of the fact that each commonwealth is dependent for its progress and prosperity upon the health of the inhabitants, has endeavored to advance with the swiftly changing living conditions by improving the methods of diagnosis, treatment and the caring for patients so as to conserve that health. Therefore, it behooves me in presenting this subject to consider first those embryonic factors contributing to the birth of the rural doctor and then show the causes responsible for the present-day sterility.

When the unpopulated land stretched beyond the distant horizon and men with families ventured forth behind ox teams to seek new adventures, they finally settled miles from the nearest trading center to build homes and cultivate the virgin soil. As the population increased a community center was formed with a store, church and school, but having no phones it required many hours during those horseback days to get a doctor to the bedside

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in cases of illness. This was the rural medical ovum fertilized by the seed of necessity which soon brought forth a young enterprising doctor to this section before his professional umbilicus had cicatrized. Bathed in the sunshine of friendship, anointed with the oils of daily contact and nourished by the fruits of self reliance, he soon developed into a professional giant. His practice extended over the unbounded plains of all human ailments and was not chained to the one-track shackles of specialization; also his diagnostic ability, without the aid of a laboratory or stethoscope, far exceeded ours of today. He could diagnose a pregnancy in the earliest stage by the appearance of the eyes and abdomen, measles and typhoid fever by their distinctive odors and with that trained sense of hearing locate the most remote spot of pneumonia more accurately than the present-day x-rays. The worshipful faith and confidence reposed in him by those people could not have been greater had he been a saint, which acted as a stimulus to his weary body through many a night's vigil while waiting for an approaching crisis in a serious illness.

After the wheels of progress rolled the first automobile upon the fast-moving runway of inventive ingenuity, regardless of the fact that this grand and glorious family doctor had reached the highest peak of immortal fame. there soon came the dawn of a new era with a complete global change in the manner and methods of the daily cycle of life. The transition from the old to the new was very slow because, before this motorized method of transportation could operate efficiently, a system of good highways had to be constructed, which consumed much time politically and constructively. The farmers soon realized that the slow-moving mule traction to cultivate the soil had to be replaced with mechanically propelled implements or they would soon be mired in the bog of inefficiency and left on the wayside by the swiftly moving modernized business world to be buried in an avalanche of debts. When this conversion to the new method of farming was completed, it required so very much less labor to cultivate the soil that many idle families had to move to the larger towns and cities seeking other employment. The children of those families entering the schools in the larger centers created the need for greater accomodations, which was satisfied by the construction of larger buildings and the formation of consolidated school systems with its absorption of the rural schools by furnishing free bus transporation. This great educational advancement launched the ship of public opinion upon the swiftly moving current of modern progress where there was immediate casting for new achievements. The next great mental catch in this new era was the landing of the hospital-building program with locations in the most accessible centers for the surrounding rural population. The public soon realized the many advantages of being treated in hospitals where they could receive the best of nursing care along with many necessary treatments requiring equipment not available in the homes, and, regardless of the condition of the patients, they could be rushed safely to the hospital in the modern ambulance. The doctors located in the hospital centers, organized clinics and had as their partners and associates a specialist from each branch of medicine. Having this organization they could well afford to have all the latest things in modern equipment necessary for a diagnosis and treatment, and with this arrangement they were able to give the patients better medical care.

I have given you a complete mental picture of the old-time rural family doctor together with a short sketch of the world's recent progress, which I intend to use while leading you through the jungle of causes productive of the passing. The first may be traced to that day of progress when, with the advent of the automobile and good roads, the most prosperous citizens in the rural towns decided to rush all cases of family illness into those centers with hospitals and clinics in search of medical care. The next great catastrophe came rolling over the rural communities with that wave of mechanized farming, leaving only a pittance of a previous large population. Following this great loss of the high-income class of patients together with the diminished population, the rural doctor soon developed a serious pernicious financial anaemia from which there could be no cure without a change of location. The wealthy citizens, living in those towns that once supported from one to three doctors, regardless of their seeking the unsolved mystery and magic in medicine from the clinics and hospitals in the larger centers, soon raised a great hue and cry for more doctors. After using much political power they finally succeeded in having an educational program enacted giving a certain number of medical students a free education provided they would sign a contract agreeing to locate in one of the small towns. While students are signing those contracts, they may not realize the tremendous price that must be paid for having been lured into medical school by such glittering financial savings. But, regardless of the legal status, I believe they will shoulder the cross of honor and bear the burden, regardless of the hardships, until their obligation has been terminated satisfactorily, although they may not be able to give proper medical care without a hospital or laboratory facilities. I am sure the public is cognizant of the great progress made by the medical profession during the past decade and it is inconceivable to think that any one would entertain the idea that doctors with modern training should locate in some rural town, when, in the centers with well-equipped hospitals, patients can have all the advantages of the latest methods of diagnosis and treatment. Also, since the advent of good roads and fast transportation, one can easily give five times more patients medical service, which may eventually cause a surplus of doctors unless specialization relieves the situation. As the human race, by using its ingenuity, has progressed to this new era, and the rural communities have passed the period in which medical ova can be fertilized by the menopausal parent necessity, due to this sterility, I can truly state, with a note of sadness, that the old-time rural family doctor is surely passing.

Chronic Prostatitis—The Management and Prognosis*

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THE CLINICAL IMPORTANCE of chronic prostatitis lies in its prevalence and in its peculiar tendency to persist and to progress unless adequately treated. There are few protracted diseases which deserve the term "chronic" more than this type of "prostate trouble," and like all such chronic diseases, some one of which is common to all types of practice, chronic prostatitis is cured, if at all, only by the preseverance of the physician. Unfortunately, there exists among the profession an understandable, yet unjustified, skepticism as to the curability of chronic prostatitis which militates against the perseverance and resourcefulness often required to bring about a successful event. In briefly reviewing the status of this subject, it is the purpose of this paper to reaffirm the urologists' faith in the curability of chronic prostatitis.

Etiology—Chronic infection of the prostate is classically said to be present in 35 per cent of men beyond 35 years of age. Experience in the Army among a younger age group and in civilian practice justifies the assertion that from 20 to 50 years the incidence about parallels the age. It is, however, at the age of about 30 to 40 that symptoms of prostatitis most often are manifested.

A small number of these prostate infections are truly gonococcal, that is up to about six to eight months following an attack of gonorrhea. Others are post gonorrheal—non-gonococcal infections. More than 60 per cent of all infections of the prostate, however, are due to other initiating causes such as the following:

1. Upper urinary tract infections.
2. Post instrumental urethritis.
3. Strictures of the urethra.
4. Focal infections elsewhere in the body.

Whatever the initiating causes or the contributory factors involved at the outset, the infection owes its chronicity to the peculiar structural complexity of the prostate gland which favors retention of infection.

The glandular portion of the prostate in which most prostatic infections are confined comprises more than one-half of the organic structure of the gland and consists of 30-70 units or lobules each served by a primary prostatic duct opening into the prostatic urethra. Beginning at their narrow orifices, the prostatic ducts pass outward into the lobules for 1 cm. then divide into tubules which repeatedly branch and expand into terminal alveoli. Throughout the greater part of their course the ducts are beset with circular and tubular diverticula, simple and compound, that gives the canal an irregular lumen, anatomically unfavorable to natural drainage. Any inflammatory or cicatricial obstruction at the orifice or along the ducts, necessarily involves a correspondingly high portion of the glandular parenchyma.

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Symptomatology—The symptomatology of chronic prostatitis presents no constant combination which might lead to an inferential diagnosis. In about 25 per cent of the men who exhibit pus cells in the prostatic expressions, there are no symptoms, but this by no means implies that the disease is pathogenically quiescent. In fact, advanced stages of chronic inflammation, fibrous replacement and sclerosis of the vesical neck are often seen in patients who had few or no symptoms or in patients whose memory of such symptoms was dimmed by many years.

If any one symptom can be regarded as pathognomonic of chronic prostatitis, it is the well known "morning drop." Its appearance hastens the guilty and the curious alike to a diagnosis of unsuspected pre-existing prostatitis. The "morning drop", sometimes associated with diurnal moisture at the meatus, and itching and tickling along the urethra, is the anterior urethra's exudative response to bacterial toxins or organisms liberated from the infected prostate.

Symptoms of effusive anterior urethritis, posterior urethritis, cystitis, seminal vesiculitis or epididymitis may be symptoms of an underlying chronic prostatitis when toxins or bacteria escape from the prostate to inflame and invade these communicating structures. In all of these conditions the prostate is suspect.

Focal infective diseases in such remote structures as the eye, the myocardium, the joints, the muscles or nerves while having their source in the prostate, may be unassociated with any genito-urinary symptoms which might serve as a clue to the causative infection in the prostate.

Diagnosis.—The diagnosis of chronic prostatitis requires microscopic study of the prostatic expression. Palpation yields little information of value. Wherever the ofermentioned symptoms exist, diagnostic message is in order. Furthermore, no complete or general examination in the male, in health or disease, is truly complete without diagnostic message of the prostate, and study of the prostatic secretion, unless there is a definite contraindication.

Treatment.—The sine qua non of treatment is prostatic massage. This simple maneuver is basic treatment in every case of prostatitis, to which all other forms of therapy are adjunctive. Many theories have been advancet for the rationale of massage, but the fact remains that massage, properly employed, does favorably influence the patient's recovery. In definition of proper employment the following observations are offered:

1. The interval between massages should be 3 to 4 days, not as long as a week.
2. Rarely more than 6 to 8 in a series; a stationary period of response is usually reached between sixth and eighth massage.
3. Rest interval of 4 to 6 weeks for adjunctive therapy, and investigation of foci.
4. Usually not more than 2 or 3 courses are required, interspersed by rest intervals. Such prolonged therapy must be anticipated and explained to the patient.

Adjunctive Therapy.—1) urethral sounds, 2) chemotherapy, 3) elimination of foci.

Urethral Sounds.—In the vast majority of cases there is no further need of the sound beyond the demonstration that it is not needed. A No. 24 sound is employed at the outset of treatment or ofllowing the first course of massage; its purpose is to detect stricture or contracture of the vasical neck. In non-responsive cases full dilatation up to 26 or 28 F. is indicated for the purpose of opening the prostatic duct orifices and to promoting evacuation of retained or inspissated secretions.

Chemotherapy.—Penicillin is the drug of choice because of its selective action on the coccal infections which predominate in chronic prostatitis. The sulfonamides, notably sulfathiazole and sulfadiazine, are also of great value. The concurrent use of penicillin and a sulfonamide is justified in the more serious or more complicated cases. Even though it has been shown by Hobby and Dawson that these drugs have no synergistic action, their joint use in urinary tract infections has proved more efficacious than either agent alone. Streptomycin may prove valuable as an aid to one of the other drugs but offers little in the treatment of coccal prostatic infections.

As to dosage, it may be said that commonly employed dosages are much too low. It is important, especially with the antibiotics, because of the tendency of susceptible bacteria to develop resistance, that adequate tissue level doses be employed ta the beginning of thetherapeutic attack and then maintained for a period of at least a week. Further therapy with these drugs, penicillin and sulfonamides, will be determined by the response of the infection and the tolerance of the patient. In dosages short of tissue saturation, penicillin and sulfonamides are effective as urinary antiseptics and they or some other effective urinary antiseptic may and should be maintained for four to six weeks to prevent reinfection of the prostate by ways of surface infection, and to allay the urethral complications of prostatitis.

Eradication of Foci of Infecton.—Obvious dental and tonsillar infections should be removed in every case of prostatitis. In many cases of chronic prostatitis, an exhaustive search for dental and tonsillar foci must be prosecuted, and if such infactions are found they must be removed. The causal relationship between dental and tonsillar infections and chronic prostatitis can no longer be questioned.

In conclusion, it is pertinent seriously to consider the psychosomatic aspects of the problem. I know of no phase of urologic practice wherein the "treatment of the patient" is so important. All males are deeply concerned with the slightest affection of the sex organs. Serious mental disturbances out of all proportion to the severity of the organic disease are common among victims of chronic prostatitis. In handling these cases the physician must display confidence in the end results of his treatment, avoid radicalism and psychic trauma and enforce a stern discipline upon the patient.

There are many special procedures employed by the urologist to which time does not permit reference, but it must be said in all sincerity that beyond a careful urethroscopic examination, these procedures are called upon only in the very advanced, long standing or complicated infections. The urologist, having the privilege of hindsight into the common failures in treatment, knows that cure comes most often from the persevering employment of the standard measures presented here. With respect to a disease so prevalently and peculiarly male, so certain to persist and progress untreated, so disturbing to a patient's psyche and lastly so amenable to treatment, it has seemed worthwhile to review the fundamentals of diagnosis and treatment and to present the hopeful outlook of a urologist.

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Pelouze, Office Urology, W. B. Saunders and Co. 312 North Cengress Street.

MISSISSIPPIANS WIN

The Association of American Physicians and Surgeons announced that George King won the $1000 prize this year for the best essay on "Why the Private Practice of Medicine Is for the Best Interest of the American People." Betty Eckles of Gulfport High School won third place last year. And we are under the impression that a Mississippian won first place last year, the first time such a prize has been offered. This is a good record for Mississippi. It is a laudable move on the part of this association to launch this important educational work. There is no doubt about free medicine being the best medicine. The free mind thinks better and wider and deeper than the one that is cramped by dictation. It is quite certain that the United States is now the leader in medical service to the people. Regimentation in other countries has lowered the standards steadily. We must continue to have free and democratic medicine, and there is no power that can render greater service to this great cause than public sentiment. Public sentiment is crystallized by education. The contest method in the school and to the public should be very effective. In this way the people may know the truth and facts on the record of service by free medicine have more convincing power. Drs. Wall, Scales and O'Mara of Jackson, Starkville, and Biloxi, respectively, are among the men who have been active in this national organization.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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EDITORIALS

Dr. W. L. Little was selected by the House of Delegates of the Mississippi State Association at its last meeting as the outstanding practitioner for this year. No better selection could have been made. He has been a great builder of good citizenship, a builder of health assets mental, physical, and spiritual. He has been a great engineer for building a useful human machine. He has kept up in a marvelous way with the march of medicine. On Sunday night, June 13, in Wesson, Dr. Little was honored by a public meeting at the Methodist church. Drs. W. H. Frizell, Felix Underwood, and W. A. Evans were among the men active on the program. There was evidence among his own people that he deserves the great esteem and confidence vested in him. Greatness is measured in terms of service. After more than fifty years of service Dr. Little feels the urge to continue and try to render still greater service. This is the heart throb of a great soul.

THE MID-SOUTH POSTGRADUATE MEDICAL ASSEMBLY

Dr. Henry B. Gotten, able and popular successor to Dr. A. F. Cooper as secretary of the Mid-South, is moving along in fine order with the program for the Mid-South Postgraduate Medical Assembly for next February. This assembly was the first of its type in the South. It is well centered and accessible. The last meeting was one of the best in its history.

We are now aware, however, that other cities have followed our plan and we now have many such meetings in the South. Consequently, it is harder to secure the very best men for a program. If you have in mind an outstanding able man whom you would like to appear on the program next February, submit his name to Dr. Gotten, 899 Madison, for consideration. The following men have already accepted for the 1949 meeting—which speaks well for Dr. Gotten and he program committee, and also should remind you to engage your room at thte Peabody Hotel, Memphis: Dr. Frederick A. Coller, surgeon of Ann Arbor; Dr. Arthur Curtis, dermatologist of Ann Arbor; Dr. John Harris, gynecologist, University of Wisconsin; Dr. James L. Poppen, neurologist of Boston; Dr. Harrison L. McLaughlin, orthopedic surgeon of Columbia University; Dr. Albert M. Snell, and Dr. E. H. Rynearson, both internists of Mayo's; Dr. W. Edward Chamberlain of Temple University, radiologist; and Dr. Frederick H. Falls, of Chicago, obstetrician.

There were forty-six deaths among the physicians in the state in 1947. They died at the average age of 70 years. In 1913 physicians died at the average age of 60 years. In 1913 the statehad in active practice more than two thousand physicians; whereas now there are only 1354 physicians in the state.

All students interested in applying for medical education scholarship loans to become effective in the fall of 1948 should contact the State Board of Health, Room 37, North Street Building ,at once for information and application forms.

S. M. A.

Southen Medical Association meets in Miami, Florida, October 25-28, 1948.

A. C. S. CLINICAL CONGRESS

The thirty-fourth Clinical Congress of the American College of Surgeons will be held in Los Angeles, with headquarters at the Biltmore Hotel, from October 18 to 22, 1948. Dr. Donald G. Tollefson of Los Angeles is chairman of the Committee on Arrangements.

O and G SOCIETY

Mississippi Obstetrical and Gynecological Society meeting at Heidelberg Hotel Monday, May 10, was enthusiastically attended by fifty-five physicians.

The guest speaker, introduced by Dr. Felix J. Underwood, was Curtis J. Lund, M. D., professor of Obstetrics and Gynecology, Louisiana State University, School of Medicine, New Orleans, Louisiana, who spoke on "Management of Uterine Bleeding about the Menopause."

The newly formed Mississippi Obstetrical and Gynecological Society held its first meeting September 22, 1947. Dr. Walter H. Simmons of Jackson has acted as temporary chairman, Dr. Richard Street of Vicksburg as temporary secretary, with Dr. W. B. Wiener assisting him in Jackson. The constitution and by-laws were drawn up and read at the November 24, 1947, meeting and accepted at the December 8, 1947 meeting.

At a business session after the scientific program the evening of May 10 the following officers were elected for the ensuing year;

Walter Simmons, Jackson, president; R. A. Street, Jr., Vicksburg, secretary; R. A. Street, Jr., Vicksburg, president elect; and Carter O'-Ferrall, Jackson, vice-president elect.

The new secretary is to be elected when Dr. Street becomes president.

The next meeting will be held in Vicksburg the latter part of October.

The **Mississippi Doctor** congratulates this new Society on its aims and vision for service to the people of Mississippi. It is commendable that although limited in membership, the Mississippi obstetrical and Gynecological Society invites all ethical physicians to its scientific programs.

DR. KLING ADDRESSES MMWA

Dr. L. E. Kling of New York, acting medical director, planned Parenthood Federation of America, was the speaker for the luncheon meeting of the Mississippi Medical Woman's Association on Tuesday, May 11, Jackson.

Dr. Virginia Howard, director, Division of Maternal and Child Health, Mississippi State Board of Health, is president of the organization.

CRYSTICILLIN

E. R. Squibband Sons announce the availability of crysticillin, a new improved form of procatine penicillin whch can be administered in aqueous suspension. This preparation presents all the advantages of prolonged action penicillin without the advantages of the preparations hitherto available.

BOOK REVIEW

Manual of Clinical Therapeutics, by Windsor C. Cutting, M. D., Stanford University, San Francisco, Calif. Published by W. B. Saunders Co., Philadelphia, Pa. Price $5.00.

For the general practitioner no book can be of more practical value than a dependable manual of clinical therapeutics. The second edition of Doctor Windsor C. Cutting's Manual is a safe guide for the practitioner and the student. In this book the therapeutic armamentarium has been brought up to the last minute. Special attention has been given to therapy in the infectious diseases. This handy bible of therapeutics not only gives the specific medical treatment for the commonly known diseases in general practice, but gives due consideration to tropical diseases as well. The book gives definite and specific information on the details of treatment, while stimulating therapeutic thinking and practical application.

Leather bound, cleverly written, an indespensable aid in clinical therapeutics, it is composed of 712 pages with many drawings and illustrations. The book is handy, a comfort to have on the desk.

FRANKLIN'S TOAST AT THE COURT OF FRANCE

They lifted their glasses and one said: "I give you the King of France, and I will call him the Sun; and I give you the King of England, and call him the Moon"; and then turning to Franklin, he said: "What will you do for a toast, with the sun and moon already engaged?" Franklin raised his glass, and said: "I cannot give you the sun, or the moon, or the stars, nor call my country such, but I give you the United States, and call them Joshua, the son of Nun, who made the sun and the moon and the stars to stand still as long as he pleased."

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

PREMATURITY FROM THE VIEWPOINT OF THE OBSTETRICIAN—Nicholson J. Eastman, Johns Hopkins University and Hospital, Baltimore, Md., Am. Practitioner 1:343-52, March 1947.

"Statistical analysis of the data of premature births at Johns Hopkins Hospital between June 1, 1926 and December 1947 yields the following information:

"Of all infants born 11.7 per cent were prematures. Of the prematures, 78.8 per cent represented the spontaneous termination of single pregnancies, whereas 14.3 per cent were from operative termination of single pregnancies, and 11.9 per cent represented multiple pregnancies. Thirty-eight and one-tenth per cent of the total of premature births could be considered due to known cause, whether maternal disease, multiple pregnancy or congenital abnormality. In about 60 per cent of all premature births no specific explanation for the accident could be elucidated.

"The frequency of premature birth in this unexplained group increases with lower economic status, and with poorer prenatal care. It is inferred that the reason for this correlation is nutritional deficiency: that the mothers of poorer economic circumstances, and especially those who are negligent about their medical care, will also be ignorant of, or negligent of, proper attention to diet.

The most important factor in premature mortality is the degree of prematurity as reflected by the weight of the infant. The mortality percentage varies inversely with the weight of the baby. However the outcome for infants in all weight categories has improved decidedly in recent years. At Johns Hopkins the death rate for prematures as a whole has fallen from 28.1 during the first ten year period to 18.7 during the last five years. This improvement is due principally to a reduction in the number of still births in the 2,000 to 2,500 Gm. group, and to a reduction in the number of neonatal deaths after the first twenty-four hours in the 1,500 to 2,000 Gm. group.

"The hope for further substantial lowering of premature mortality rests on: 1) providing adequate diets for pregnant women in the expectation of thereby diminishing the incidence of 'unexplained' premature labors; 2) administering vitamin K to all women as soon as labor starts; 3) permitting more women to go closer to term in certain cases of placenta praevia, pre-eclampsia and premature rupture of membranes; 4) gentle, nontraumatic, nonasphyxial delivery."

COMMENT: This is quite an interesting article from the experience and management of such an outstanding authority as Dr. Nicholson Eastman who has been head of the Obstetrical Department of Johns Hopkins for a number of years and is one of the leading obstetricians of the entire world. We felt that an abstract of this paper would be of unusual interest since it brings out some very important points to guide the prenatal as well as delivery care of these patients.

VETERANS ADMINISTRATION

AEH: A 48-year-old white male, admitted to hospital January 9, 1947.

Note: Patient slightly mentally depressed and history given indefinitely and reluctantly.

Chief Complaint: Soreness in abdomen.

Present Illness: In 1928 patient suffered severe burns, with crushing of his legs when the wall of a burning building fell on him. He was hospitailzed for about 18 months at McComb Infirmary. He developed oliguria at that time, which cleared up gradually. His hospitalization was prolonged because of osteomyelitis of femur. He was then relatively symptom free until one year ago when he developed cloudy urine with burning on urination. It has continued until the present time, intermittently. Since December 24, 1946, patient has been in bed because of weakness; no urgency, frequency, or nocturia. Patient did state that several years ago (time not remembered) he passed some blood on urination, the blood was in dark shreds. He has had no recurrence.

Systemic Review:

Patient has lost 50 pounds of weight during the past ten months; wears glasses for reading; occasionally blows bloody material from his nose; wears upper and lower dental plates.

Gastro-intestinal: Appetite poor; bowel movements are irregular, and he sometimes has diarrhea alternating with constipation; has had hemorrhoids for several years. During past week, he has been vomiting up coffee ground material at night. He has suffered from nausea for the past several weeks and has had intermittent sharp colicky pain in the left upper quadrant, not related to eating, worse at night and lying down, and eased by sitting erect. This began in June, 1946, and has been getting worse recently.

Cardiovascular: Pain in the left upper quadrant, radiates up the left chest wall, and seems to press in on the chest along the left sternal margin. No cough; no hemoptysis; no palpation; and no shortness of breath.

PHYSICAL EXAMINATION:

Patient a cachetic looking male, appearing much older than his stated age. He seems to be slightly mentally depressed, and the history is indefinite and given reluctantly. (Age, 48; past weight, 185; present weight, 145 lbs.; height, 5' 10½"; temperature, 98°). The pupils were slightly unequal and did not react to light; the discs showed temporal pallor, bilaterally; no hemorrhages or exudates.

The nasal septum was deviated to the left, and the left nostril blocked by mucoid crusts. The throat appeared dry. Several pea-sized, soft, discrete, non-tender lymph nodes could be palpated in the left axilla. The skin was waxy looking and felt thickened and edematous, and the surface was dry, smooth, and shiny. There were scars on the left thigh; back of the left leg; on right knee and right foot from burns and injuries which he suffered in 1928. There was one-plus pitting edema pretibially.

Chest: Chest wall narrow and rounded, and did not move with respiration; there was flatness at the left base, with distant breath sounds, slight tenderness in the left costal vertebral angle.

Heart: Blood pressure, 160/94; pulse, 80. Normal sinus rhythm; apex in the fifth interspace just outside the mid-clavicular line; no thrills or murmurs; A2 loud and snapping; peripheral vessels soft and smooth.

Abdomen: Abdomen slightly rounded with smooth contour; hyperactive high-pitched peristalsis heard over the entire abdomen. Liver, kidneys, and spleen not palpable; slight tenderness along both costal margins; no shifting dulness.

Genitalia: Scrotum appeared edematous.

Skeletal: Movement of left shoulder slow and difficult; left femoral bowed, laterally; right knee stiff; right foot narrowed from removal of the fifth metatarsal.

X-rays: 1-11-47: Flat plate of abdomen, negative, chest x-ray showed some cloudiness of left lower lung field. 1-17-47: G. I. Series showed marked gastric retention with a filling defect along the greater curvature of the stomach.

Laboratory work: 1-10-47: Urinalysis showed specific gravity 1.009 plus three albumin; rare RBC; 5 to 6 WBC per 1pf. Blood count showed 70 per cent hemoglobin; 3,500,000 RBC; 16,700 WBC; 76 per cent polys; 24 per cent lymphs; Kahn, positive, 320 KU.

1-11-47: NPA was 93.7; creatinin, 4.8. 1-12-47, complement fixation test for syphilis, positive. **1-13-47:** Mosenthal test showed 700 cc. a day urine with specific gravity of 1.013; 425 cc. night specimen, specific gravity 1.011.

1-14-47: Prothrombin time, 96 per cent normal. **1-15-47:** 65 per cent hemoglobin; 3,000,000 RBC; 10,000 WBC; 75 per cent polys; 20 per cent lymphs; 5 per cent eosinophils; coagulation time, 4 minutes, 10 seconds; bleeding time, 3 minutes; blood type, C; total protein, 4.8 per cent; albumin, 3.8 per cent; globulin, 1 per cent.

1-16-47: 66 per cent hemoglobin; 3,100,000 RBC; Wassermann, positive; Kahn, positive, 320 KU.

1-17-47: NPN, 98.6; creatinin, 6; cholesterol, 162; Cholesterol esters, 68.

1-20-47: NPN, 144; chlorides, 460; urinalysis showed plus 4 albumin; specific gravity, 1.015; occasional RBC and WBC.

CLINICAL COURSE:

On the ward patient gradually became

worse. On 1-14-47 he developed nose bleed which continued in spite of repeated nasal packing. The bleeding ceased after a blood transfusion (1-15-47) and injection of vitamins C and K.

On 1-16-47 patient was started on 50,000 units of penicillin every three hours, intramuscularly. On that day he complained of muscle twitching for which he was given calcium gluconate, intravenously.

On 1-17-47 he complained of nausea and weakness. At this time his ankles were edematous, and output, which had been adequate, was now 1200 ccs. per day. A stomach tube was put down and 500 ccs. of material consisting of food, barium, and mucous were removed from the stomach. Later that day he developed convulsions.

On 1-18-47 patient was mentally clear, but complained of much pain in his joints. On 1-19-47 patient felt better and required no sedation or opiates. He was able to keep coffee and water on his stimach.

1-20-47: Patient had convulsions and urine output decreased. At 4:00 p.m. he was catheterized and only 8 ounces of urine were obtained.

5:15 p.m.: Severe generalized convulsions. Patient now semi-comatose and breathing heavily; B.P. 180/94, with distention of his abdomen. Patient became irrational and restless; pronounced dead at 10:50 p.m. 1-20-47.

DISCUSSION

L. T. Carl, M.D., (Jackson)—My discussion of this case will have to be based on a rather hazy memory of having seen this patient back in the first part of January of this year, and from a note which is made at that time and from a study of his clinical chart. At that time we made the following note: "SPECIAL MEDICAL EXAMINATION: 1-15-47. This patient was interviewed and examined on 1-10-47, with findings as recorded already on the record. At that time it seemed most likely that he was suffering from a chronic glomerulonephritis with nephrosis, end stage. He seemed to have evidence of fluid in the left pleural cavity and also ascites and some edema of his extremities. Since he was seen on the tenth, further laboratory work has been done. It appears to show that he has fairly marked nitrogen retention at the time. which would confirm the impression of nephritis. His blood Kahn is strongly positive. I doubt whether this has anything to do with his nephritis. He also gives a history of osteomyelitis, but this has not given him trouble since 1928, and one would not think that this is a case of amyloidosis. Suggest that his blood proteins be determined since he probably has a very low level. Treatment otherwise would be with a salt-free high protein diet with frequent determinations of blood nitrogen and measures to combat his anemia. I do not see any reason why he should not be given massive doses of penicillin since there is a bare possibility that this might be a nephritis due to syphilis."

At the time this patient was seen, it seemed to me to be a rather typical case of chronic glomerulonephritis in the end stage, possibly with a nephronic syndrome superimposed. After reviewing the clinical chart it still seems to be a rather typical case of end-stage chronic glomerulonephritis. However, since it has been chosen for clinical-pathological conference, it is entirely possible that there has been some other less obvious condition which was present. We would like to review the history and clinical course and name some possibilities. These possibilities would not, of course, exhaust the various things which might have been present or led to his condition as seen, but we believe that they are the most likely ones.

In the first place it is interesting to conjecture on the onset and duration of his kidney condition. This was a 48-year-old patient and we are told that in 1928 he suffered severe burns and crushing injuries of the legs. This must have been quite severe because he was in a hospital for 18 months. Whether the greater portion of this hospitalization was the result of the burns with subsequent surgery, we do not know. It is interesting to note that at the time he had oliguria which cleared up gradually. This brings up the possibility and, we would think, the probability that he might have suffered from the so-called Crush syndrome at that time. While I am not too well informed at this time on the exact mechanism of the Crush syndrome, it is my impression that it has been blamed on the toxic and obstructive results on the kidneys of degenerative products from injured muscle tissue, myoglobin or myohemoglobin which leads to an involvement of the kidneys following the release of the pressure and the absorption into the circulation of the degenerative products from the injured muscles. This syndrome is associated with oliguria. Whether it leads to chronic or permanent damage to the kidneys, I do not know. Consequently, one could not say whether his nephritis began then or was the result of this so-called Crush syndrome. We are told that he had severe burns and was in a hospital for 18 months. He might have had a considerable amount of infection and this might have caused or started an acute nephritis which eventuated into a chronic nephritis. A nephritis of 20 years would not be, I do not think, unusual and we might surmise that he had had a kidney involvement for these 20 years following this injury. We are told that several years ago he passed some blood on urination and this might have been a hematuria from his original, acute nephritis or an exacerbation of an already chronic nephritis.

At any rate, when the patient was seen in the hospital he had many of the symptoms of an end-stage chronic glomerulonephritis. He had an anemia which was fairly marked. We have no hematocrit and we do not have the hbg. expressed in grams so one could figure the MCV and MCHbg. However, from the red count and hbg. it appears to be a normocytic, normochromic type of anemia which one often sees in these chronic debilitating systemic diseases such as nephritis. The BP fits that of a chronic glomerulonephritis. In a typical case of chronic nephritis, one finds a low-grade hypertension such as this man showed—160/94. In contradistinction to essential hypertension which usually shows much higher BP. the usual case of glomerulonephritis shows moderate hypertension. The urinary findings show that the kidney function was very poor, since the highest concentration on the Mosenthal test was 1.013 and the urinary concentration was rather fixed, the lowest being 1.009. Furthermore, he showed very marked nitrogen retention as evidenced by an NPN of 93 to 97 and a creatinine of 6. There was rather marked cachexia and this again is what one finds in the end stages of a chronic nephritis. He showed rather marked albuminuria. It is surprising that on none of the urinalyses, three in number, were any casts found. A few red blood cells were present.

Because of the edema and the suggestive ascites and what seemed to be evidence of fluid in the left pleural cavity, we thought that he might have a nephrosis or rather a chronic glomerulonephritis with nephrosis. However, the cholesterol determination showed a normal value, namely 162 mg. This would seem to rule out a primary nephrosis. He probably did not have a nephrotic syndrome. One again is rather surprised to find the report of the blood proteins as follows: Total protein 4.8 gms, albumen 3.8 gms, and a globulin of 1 gm. At this time one cannot take issue with this laboratory report, but I think one would rather be justified in asking a repetition of this if it were possible. This is a rather low total protein and in the presence of rather marked albuminuria while he was in the hospital, one would have been less surprised to find the globulin to be 3.8 gms and the albumin 1 gm. This is particularly so since he showed evidence of edema.

We must consider malignant hypertension because of this patient's age. It most commonly supervenes in cases of essential hypertension and chronic nephritis between the ages of 40 and 60, most commonly between 50 and 60. However, this man did not show the usual findings of a malignant hypertension. In the first place his BP was not greatly elevated. Again, he showed no typical eye findings such as edema or swelling of the optic discs, hemorrhages or exudates in the retina, nor is it recorded that he had any exophthalmos which is often seen in malignant hypertension. We do not think this diagnosis needs to be considered seriously.

With a history of a severe injury with prolonged hospitalization twenty years before and particularly with the findings of a strong serology report for syphilis, one must consider amyloidosis. We cannot definitely rule this out but we do not think it was present. So far as we know, he did not have a chronic suppurative condition over a long period of years. We get no history of diarrhea which may set in in these patients particularly in the late stages. He did not live long enough to have a congo red test run, but we believe that it would have been negative.

Carcinoma of the stomach was considered by the ward surgeon and particularly so after a report by the x-ray department of a filling defect on the greater curvature in the cardia of the stomach and 50 per cent retention of barium. I do not know how to rule this out clinically, but one does not need carcinoma of the stomach to explain his symptoms. The anemia, the vomiting of blood, the retention and nausea and emaciation could all be explained on his nephritis and uremia.

Likewise, it would seem that the x-ray findings could probably be explained on the same basis. It is entirely possible that there was some edema of the stomach wall and possibly of the pylorus which gave rise to the x-ray findings and gave rise to the obstruction. If the filling defect were on the greater curvature in the cardiac region of the stomach, one would not expect a lesion in that region of the stomach to cause a 50 per cent retention of barium on the basis of a mechanical obstruction. Nor would one expect that there would be enough interference with motility of the stomach from a lesion in that area to prevent normal emptying of the stomach. It is my impression that with carcinoma of the stomach, particularly those associated with achlorhydria, the emptying of the stomach is more rapid than normal if the lesion does not obstruct the outlet of the stomach.

When this man was admitted he had many of the classical symptoms of uremia. In the first place he had been in bed at home because of weakness since December 24, having been admitted to the hospital on January 9, 1947, following. Weakness, loss of weight, loss of appetite, nausea and vomiting are very prominent symptoms of uremia. Nausea and vomiting which we have mentioned above could be explained on this basis. The bleeding from the nose is also easily explainable on the basis of the uremia although the mechanism of it I am not certain. It is mentioned in the history that he was in a rather mentally depressed state and this was probably on the basis of his uremia with cerebral edema. We think the uremia could be easily explained by the chronic nephritis with failing kidney function.

Another interesting finding is that on admission his blood count was 16,700 with a normal differential. A high white count is seen quite often in uremia from any origin. Of course, although this man appeared to be edematous, it is entirely possible that in reality he had some dehydration and some of this increased white count may have been on this basis, particularly since he had been vomiting. However, the presence of an elevated white count fits in with the uremic condition. He had complained of pains in the abdomen and these again may often be on the basis of uremia.

Undoubtedly, with such a strong Kahn which gave a reading of 320 units and with a positive compliment fixation test, we must assume that this man did have syphilis. We have mentioned this as a possibility in considering a diagnosis of the etiology of a possible amyloidosis. We must also mention it as a faint possibility as the cause of his nephritis. If this were found to be so at autopsy, it would be most unusual, but such cases have occurred. However, I think we can assume that probably the syphilis did not play much part in his nephritis or in his death.

The urology department ruled out the possibility of an obstructing lesion of the GU tract as a cause of his uremia. It was noted that the prostate was normal in size and consistency and that a number 22 catheter was inserted with ease.

In conclusion, taking the chart at its face value, one could explain all his findings on the basis of a chronic glomerulonephritis in the end stage with anemia, low blood proteins, probably some myocardial decompensation.

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The Medical Library—A Vital Force in Public Health

E. LOUISE WILLIAMS, Librarian

There is no greater force for preventing disease and protecting health than **Knowledge**. There is no greater storehouse of such knowledge than the well-equipped, up-to-date medical library. Fortunate is the physician who has access to such a storehouse and who knows just how to make the fullest use of it in his day to day practice. More fortunate still are the countless patients under his care who stand to benefit from his wise and discriminating use of the medical literature at his disposal. Costly mistakes may often be prevented and lives saved by reviewing the experience of others as recorded in books and journals. In addition, the investigating physician may gain some vital piece of information which combined with his own present knowledge and experience will lead to an important discovery or another major advance in medical progress. When this happens, the whole world benefits. Like dropping a pebble into a pool, the constructive influence of the library radiates in all directions. Its achievements cannot be measured in terms of so many books or journals loaned or in the number of individuals served. Almost everyone stands to benefit indirectly as the library's resources are utilized to extend knowledge and to help develop skill and competence in dealing with problems of health and disease. There are no iron curtains or boundary lines in this field.

The medical library is a vital center for the continuous education of physicians and allied workers in public health. Unless one continues study he will likely regress as the world and events in it move speedily on and new knowledge is unfolded. To derive the greatest fruits from our efforts and the greatest satisfaction from our work, it behooves everyone to try to keep up with what is going on in his special field. The library is our postgraduate school where we may mingle with the great and the near-great who have written on subjects of interest to us. As a source of inspiration and help, it is never-failing.

Dr. John R. Orndorff,[1] in a recent address on **The Self-Education of the Practicing Physician**, stated: "The self-education of any physician stems from four sources: the medical society, travel, patients, and reading. The first three usually bring only minor benefits to the general practitioner. Meetings of the medical societies are often for the specialists only. Travel usually is to medical centers, to see great specialists or to engage in postgraduate courses preparing specialists. Patients as a source must be considered as subjects of clinical investigation. As such, they are usually adapted to a specialist studying certain diseases or disease groups. What is left to the general practitioner? Books, books, books, and medical journals. These open to him all the accumulated knowledge of the past and present. Through books and journals he has a door he may always keep ajar to invite the past and future to temper the present. But what general practitioner opens this door? Many would, but few can. If he has had any degree of success, he is so busy with his rounds of professional duties, that to take time to read, he must either neglect Mrs. Smith's coughing baby or Mrs. Jones's lumbago. As Osler remarked, "Few men live lives of more devoted self-sacrifice than the family physician, but he may become so completely absorbed in work that leisure is unknown; he has scarce time to eat or sleep, and as Dr. Drummond remarks in one of his poems, 'He is the only man, I know me, don't get no holiday.' There is danger in this treadmill life lest he lose more health and time and rest, 'his intellectual independence.'"

There can be no question of the physician's obligation to both himself and to the better care of his patients to so budget his time that he can keep abreast of new developments and at the same time preserve his intellectual independence. "We owe much to the past, but more to the future," states W. B. McDaniel, 2d[2] in a current editorial. No one is a bystander in the making of today's history, and "it is wise to regret ever what a small part of time we play. All that matters is to make the small part count, and in as creative a way as possible. . . "

The State Board of Health Library is a general medical and public health collection for the use of health workers, physicians, dentists, nurses, laboratory technicians and others throughout the state. As such, it maintains a good cross-section of the current books and journals relating to these fields. The physician who does not live near enough to have easy access to the reading room may feel free to make use of the Library by dropping his requests in the mail. The request may be for a specific book or journal or for a selection of references on some desired subject. Books may be borrowed for a 2 week's period and can be renewed for an additional 2-weeks when not in demand by others. Some discretion has to be exercised in the time allowed on journals and certain books of reference value, but every effort is made to serve as completely as possible the needs of everyone doing work in health and related fields. The only obligation asked of borrowers is that they comply with usual library rules and to make good any losses or injuries to books while in their care.

Looking over the library's accomplishments in the recent, somewhat trying years, there is justifiable pride. In spite of innumerable obstacles and difficulties there has been progress. Particularly noteworthy is the periodical collection, to which many individual physicians health workers and others have contributed. Watching the Library grow into a power capable of so much good has been a thrilling experience. In a world at present uncertain of its direction, the Library shines like a light as it remains a positive and constructive force—a beacon in the darkness, so to speak. It is veritably just this for within it may be found truth and light and direction for the solving of manifold problems. The ultimate contribution which the Library may be able to make depends in large measure upon the full utilization of its resources by those entrusted with the health and medical care of the people of the state. The broad application of the rich store of knowledge upon its shelves would make possible a level of health and physical well-being among Mississippians such as never before has been realized. Hopes and dreams for the future will not be fufilled until the vital truths recorded in the literature are put to work for the generation of today.

The State Board of Health Library is a gen-valuable and useful collection and stands ever ready to assist the public health and allied professions in their important work. It is without question an important instrument for the diffusion of knowledge and a distinct cultural and scientific asset to the state.

Recent additions to the Library:

1. Leithauser, D. J.—*Early Ambulation and Related Procedures.* Thomas, 1946.
2. Commission on Hosp. Care — *Hospital Care in the U. S.* Commonwealth fd., 1947.
3. Med. Clinics of N. America:
    —Symposium on *Specific Methods of Treatment.* Sept. 1947.
    —Symposium on *Diseases of the Respiratory Tract,* Nov., 1947.
    —Symposium on *Endocrinology.* Jan. 1948.
    —Symposium on *Diseases of the Digestive System. Mar. 1948*
4. Tobey, J. A.—*Public Health Law.* 3d ed., Commonwealth fd. 1947.
5. Rockefeller Foundation, International Health Divsn.—*Collected Papers, 1946.*
6. Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. 31st Report, 1944-46 (collected papers).
7. Deming, Dorothy—*The Practical Nurse.* Commonwealth fd., 1947.
8. Mono. of the Soc. for Research in Child Development—*Physiology and Pathology of the Newborn,* 1945.
9. Wakeman, S. A.—*Microbial Antagonisms and Antibiotic Substances.* Com. fd., 1947.
10. Johns Hopkins Hospital—*Manual of Applied Nutrition.* 2d ed., 1946.
11. Natl. Foundation for Infantile Paralysis—*Collected Papers of the Grantees,* vol 7, 1946.
12. Shryock, R. H.—*American Medical Research, Past and Present.* Commonwealth fd., 1947.
13. Witmer, H. L.—*Teaching Psychotherapeutic Medicine* (exper. course for gen. physicians). Commonwealth fd., 1947.
14. Taussig, H. B.—*Congenital Malformations of the Heart.* Commonwealth fd., 1947.
15. Leake, Chauncey D... — *Lethteons The Cadenced Story of Anesthesia.* Univ. of Texas pr. 1947.
16. *1947 Yearbook of Pediatrics.* Yrbk. pub., 1947.
17. *1947 Yearbook of Dentistry. Yrbk, pub., 1947.*
18. Sadler, Wm. S.—*Mental Mischief and Emotional Conflicts.* Mosby, 1947.
19. Odum, H. W.—*The Way of the South.* Macmillan, 1947.
20. Smillie, W. G.—*Public Health Administration in the U. S.* Macmillan, 1947.
21. Turner, C. E.—*School Health and Health Education.* Mosby, 1947.
22. Dameshek, Wm.—*Morphologic Hermatology.* Grune & Stratton, 1947.
23. Hill, J. M. & Dameshek, Wm.—*The RH Factor in the Clinic and the Laboratory.* 1947.

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[1] ORNDORFF, J. R.—The self-education of the practicing physician. Bull. of the Med. Lib. Assn. 36: 34-37, January, 1948.

[2] McDANIEL. W. B., 2d—Editorial, *Bull. of the Med. Lib. Assn.* 36:125, April, 1948.

24. Deming, D.—*Careers for Nurses.* (*McGraw-Hill*, 1947).
25. Chayer, M. E.—*Nursing in Modern Society.* Putnam, 1947.
26. Miller, Wm. Snow,—*The Lung.* 2d ed., Thomas 1947.
27. Mettler, C. C.—*History of Medicine.* Blakiston, 1947.
28. Dunbar, H. F.—*Mind & Body* (Psychosomatic Medicine). Random House, 1947.
29. Kinsey, A. C., Pomeroy, W. B. & Martin, C. E.—*Sexual Behavior in the Human Male.* Saunders, 1948.
30. Schwartz, L., Tulipan, L. & Peck, S. M.—*Occupational Diseases of the Skin.* 2d ed., Lea & Febiger, 1947.
31. Rosen, Geo. & Caspari-Rosen, B.—*400 Years of A Doctor's Life.* Schuman, 1947.

3a. Hull, T. G.—*Diseases Transmitted From Animals To Man.* 3d ed., Thomas, 1947.

33. Boyd, Wm.— *A Textbook of Pathology.* 5th ed, Lea & F., 1947.
34. Boyd, Wm.—*Surgical Pathology.* 6th ed., Saunders, 1947.
35. Papanicolaou, G. N. & Traut, H. F.—*The Epithelia of Woman's Reproductive Organs.* Commonwealth Fdo., 1948.
36. Anderson, G. W..., & Arnstein, M. G.—*Communicable Disease Control.* Macmillan, 1948.
37. Top, F. H.—*Handbook of Communicable Diseases.* 2d ed., Mosby, 1947.
38. Hogeboom, F. E.—*Practical Pedodontia or Juvenile Operative Dentistry and Public Health Dentistry.* Mosby, 1946.
39. Bauer, W. W.—*Stop Annoying Your Children.* Bobbs-Merrill, 1947.
40. Amer. College of Surgeons—*Manual of Hospital Standardization.* 1946.
41. Yost, E.—*American Women of Nursing.* Lippincott, 1947.
42. Waterman, T. L. — *Nursing for Community Health.* 2d ed., Davis, 1947.
43. Olson, L. M.—*Improvised Equipment in the Home Care of the Sick.* 4th. ed., Saunders, 1947.
44. Chenoweth, L. B. & Selkirk, T. K.—*School Health Problems.* 3d ed., Appleton-C., 1947.
45. Saul, L. J.—*Emotional Maturitys The Development and Dynamics of Personality.* Lippincott, 1947.
46. Hayes, E. W.—*Tuberculosis As It Comes and Goes.* Thomas, 1947.
47. Shirley, H. F.—*Psychiatry For the Pediatrician.* Commonwealth Fd., 1948.
48. Mims, Edwin—*Chancellor of Vanderbilt.* V'bilt Univ. pr., 1940.
49. Rennie, T. A. C. & Woodward, L. E.—*Mental Health in Modern Society.* Com. Fd., 1948.
50. Assn. for Aid of Crip. Children— *The Cerebral Palsied . Child and His Care in the Home.* A. A. C. C.. 1947.
51. N. Y. State Restaurant Assn.—*The Sanitation Manual; A Guide for Management.* 1948.
52. Hammer, B. W.—*Dairy Bacteriology.* 3d ed., '48.
53. Purves-Stewart, Sir James—*The Diag. of Nervous Diseases.* London, E. Arnold & Co. 1945.
54. Brill. A. A.—*Lectures on Psychoanalytic Psychiatrty.* Knopf, 1946.
55. Kalinowsky, L. B. & Hoch, P. H.—*Shock Treatments and Other Somatic Procedures in Psychiatry.* Grune & Stratton, 1946.
56. Holmes, G.—*Intrto. to Clinical Neurology.* Mms. & Wilkins, 1946.
57. Zachry, C. B.—*Emotion and Conduct in Adolescence.* Appleton-Century, 1940.

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Other Forms Meningitis	7	8	11.6
Pellagra	3	2	127.2
Pneumonia	103	112	867.4
Pulmonary Tuberculosis	203	93	140.0
Scarlet Fever	10	23	24.0
Smallpox	1	1	.4
Tularemia	6	0	6.4
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Twenty-fifth Anniversary Recounts Progress

At the state meeting last month Mrs. J. K. Avent, incoming president, reported the organization of a new auxiliary, the Delta Medical Auxiliary, and a new unit, the Washington County Unit, with a total membership of forty-seven. Of the eighty-two counties in the state, only twenty are yet unorganized. More than 150 subscriptions to the **Bulletin** were secured the past year, and an increased interest was shown in **Hygeia**.

In reviewing the history of the state organization, it was found that nineteen of the twenty-three presidents who have served over the quarter century are living, fifteen of whom are still active in the organization. At the silver anniversary six charter members and nine past-presidents were present.

At the post-convention board meeting it was agreed that the Auxiliary sponsor an essay contest in high schools on "Voluntary Health Insurance." Also the group arranged for a special day to be set for a state-wide observance of Doctor's Day.

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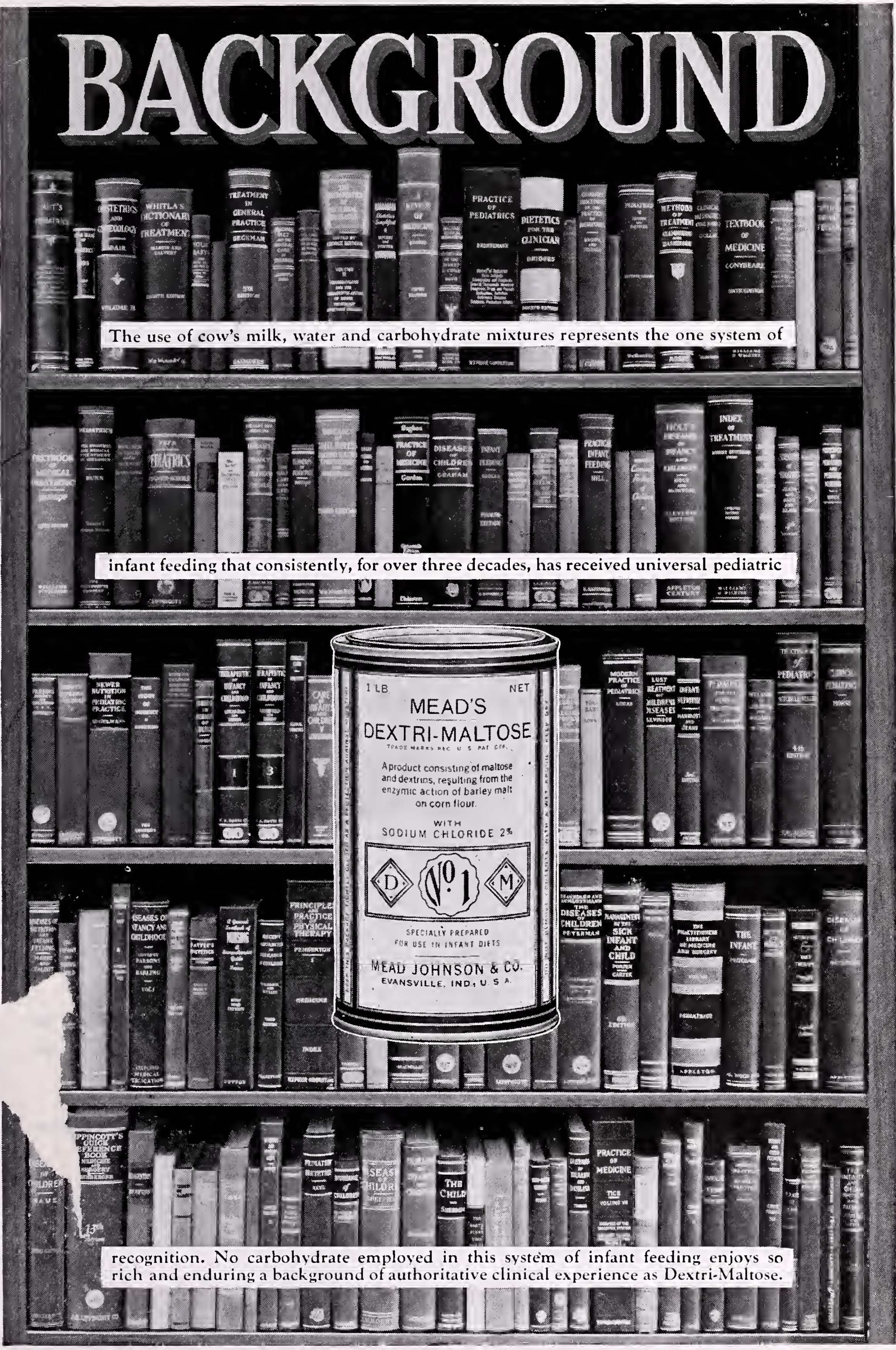

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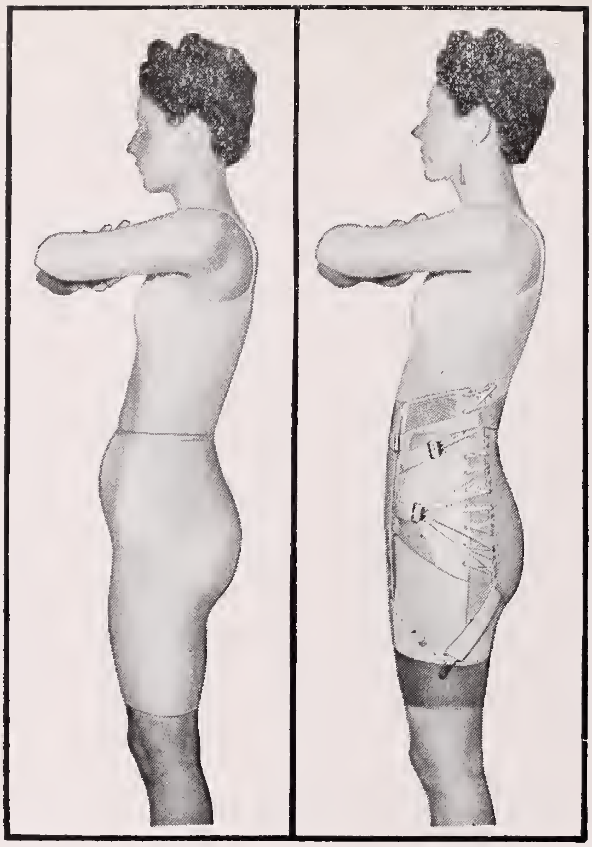

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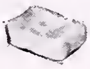
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the
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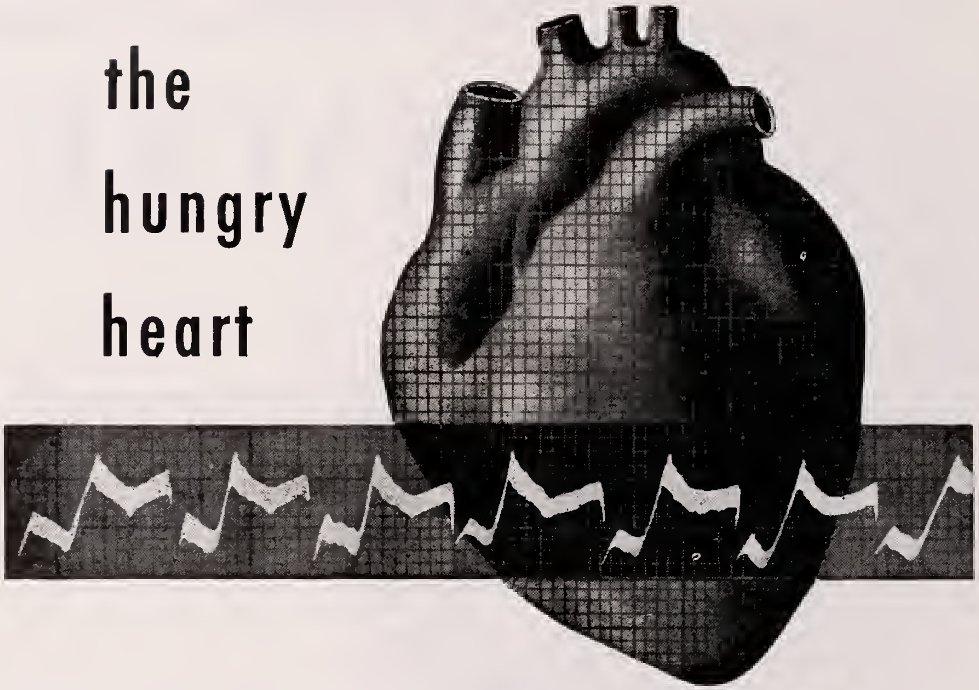

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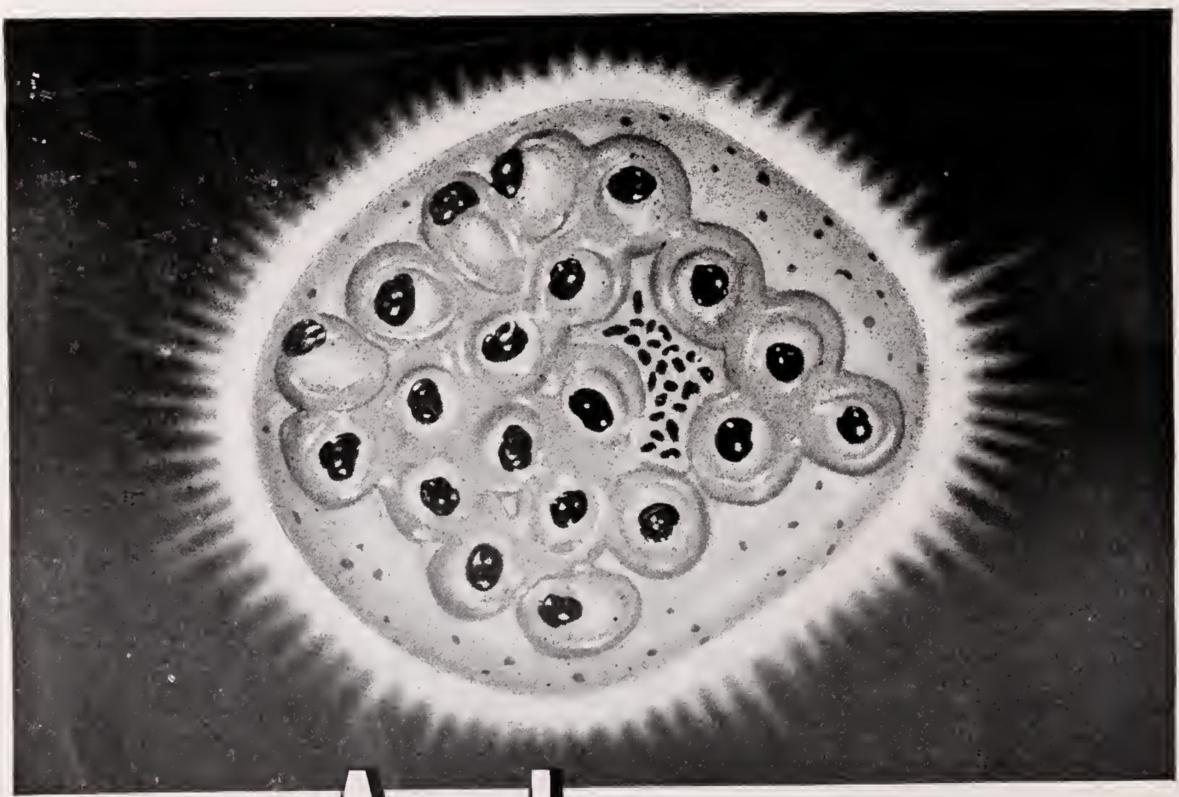

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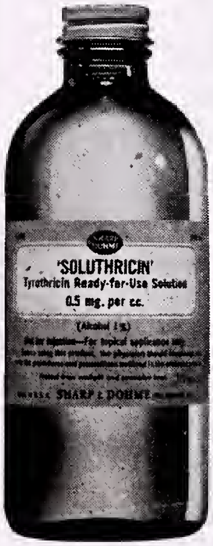

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1. Canada M. A. J. 54:283 (Mar.) 1946.
2. J. South Carolina M. A. 44:17 (Jan.) 1948.

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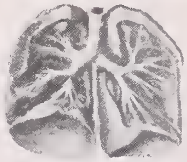

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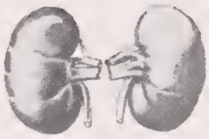

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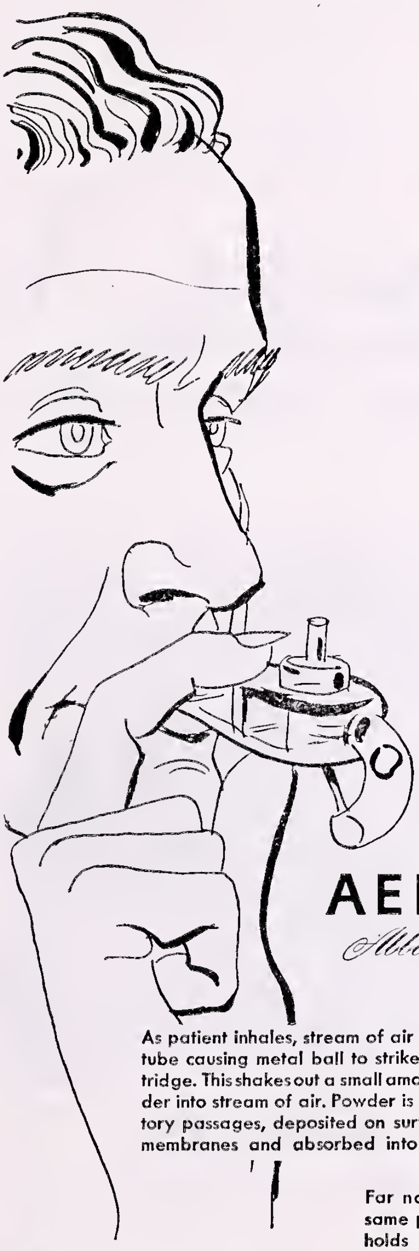

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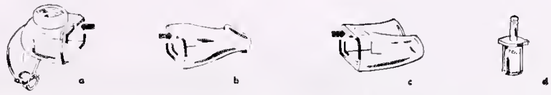
**Krasno, L., Karp, M., and Rhoads, P. S., (1948), Inhalation of Dust Penicillin, Ann. Int. Med., 28: 607-617, March.*



(a) Discharge chamber is attached either to (b) Mouthpiece or (c) Nosepiece for use with (d) Abbott Sifter Cartridge.

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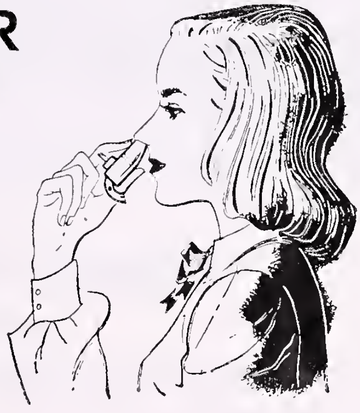

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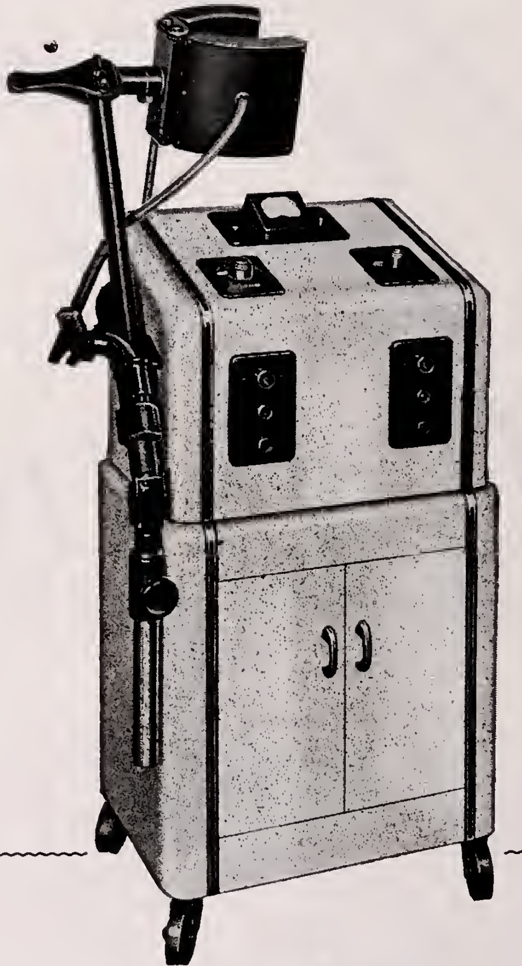

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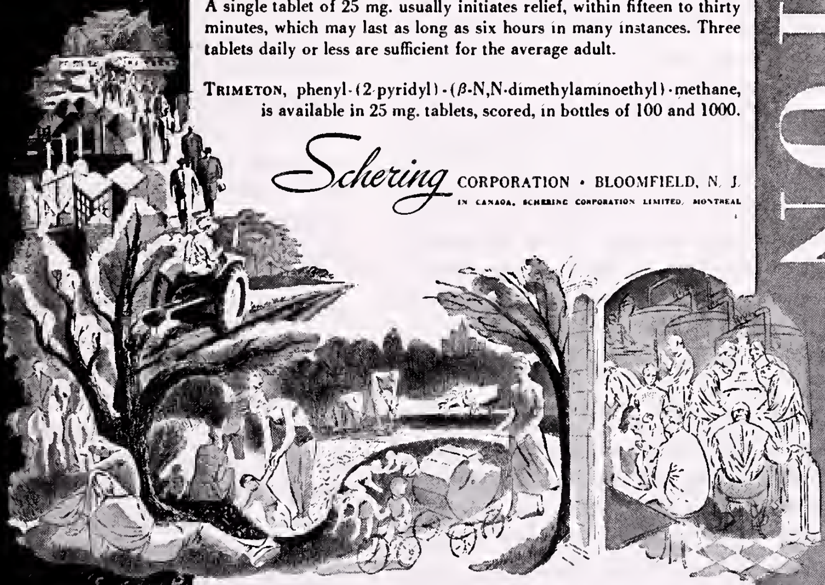

Primary Carcinoma*

Dr. Paul Gamble
Greenville, Miss.

PRIMARY carcinoma of the gallbladder is a much more common disease than is generally supposed. It constitutes 5 to 66 per cent of all carcinomas and has a very definite relationship to biliary calculi. In a large series of tests from many different clinics 69 to 100 per cent of the carcinomas of the gallbladder were associated with biliary calculi. This relationship is shown in a more striking manner in that 4 to 14 per cent of cholelithiasis are associated with carcinoma of the gallbladder. In an analysis by Rolleston 94 of 99 cases of carcinoma of the gallbladder were associated with stones. Whereas only twice in thirteen cases of metastatic carcinoma were gallstones found. Lentze found in 567 cases of gallstones, an incidence of 5.1 per cent cancer in women over thirty-nine years of age and 4.3 per cent for both sexes. He considers calculi the primary disease in cancer of the gallbladder. Finisterer found the association of cancer and stones so frequent that he regarded familial occurrence of cancer as one of the indications for surgical intervention in cholelithiasis. Beaver and Benz in 903 cases, found 1.5 per cent cancer. They believed that cancer and stone were independent of each other. It is a matter of the greatest importance from the standpoint of cancer prevention to emphasize the scarcely realized fact that one in twenty-five who have gallstones, will have carcinoma of the gallbladder. The mortality rate for cholecystectomy seems less than the risk of cancer.

How calculi act to produce cancer is of course unknown. Leitch has produced cancer of the gallbladder in guinea pigs by implanting gallstones or pebbles into the lumen of the organ and recently two Russian workers, Petrov and Krotkina have produced carcinoma of the gallbladder in guinea pigs by the installation of a glass rod into the organ. It has taken them from one to two years to produce a malignant change although there is early a proliferation of the mucosa. They emphasize the point made by Graham of prophylactic cholecystectomy in elderly women with gallstones as having received experimental support. Also the malignant nature of the disease with early metastases was confirmed on the animals.

Because of the close relationship between carcinoma of the gallbladder and calculi, it is not surprising to find it 4 to 5 times more common in women than in men. This is in contrast to carcinoma of the biliary passages which is slightly more common in the male. It is a disease of middle age and the average for its development is 58.

The gallbladder carcinomas occur in three rather distinct forms: 1) *Papillary.* This consists of a course irregular mass that generally distends to completely fill the organ. It probably arises from papillomatous outgrowths of the mucosa. Microscopically, it is adenomatous in character and tends to spread through the wall of the gallbladder and to involve the peritoneum, but the liver is involved fairly late in the disease; 2) *Gelatinous.* This form of the tumor occurs in large bulky masses with early metastases to the liver, peritoneum, lymph glands, and adjacent structures, and secretion of mucus is the most conspicuous feature. It is adenocarcinoma microscopically and Ewing states that next to the stomach, it is the most frequent source of gelatinous carcinoma of the peritoneum. 3) *Infiltrating.* This begins locally, usually at the site of a chronically inflamed portion of mucosa. The wall of the gallbladder is involved early and becomes quite thickened. Metastases occur early to the liver, spleen, peritoneum, and to the lymph glands.

Clinically, there are no characteristic symptoms of carcinoma of the gallbladder. The symptoms present are those of the underlying chronic cholecystitis and usually cholelithiasis. This is true in the case to be reported here. If there are metastases to the liver, or obstruction to the common duct, the disease may be suspected but final proof of the primary lesion usually rests with a laparotomy or autopsy.

Cole has stated recently that at the present time carcinoma of the gallbladder is probably on the decline because first there is much more surgery done for gallstones at the present time and secondly, other types of cancer

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Read on Oct. 9 at N. E. Miss. Medical at University of Mississippi.

such as of the lung are on the increase. As previously mentioned, the onset of the disease is so insidious and the appearance of metastases so rapid that by the time the patient comes to operation the condition is hopeless. These tumors are insensitive to radiation. Several authors have gone so far as to recommend prophylactic cholecystectomy wherever stones are present as a cancer prevention method.

The case to be reported here is that of a sixty-eight-year-old colored male admitted Kings Daughters Hospital 3-7-47, complaining of pains in the upper abdomen of 6 to 8 weeks duration. His past history was irrelevant but on closer questioning, it was revealed that for some years he had been bothered with eructation, gas, and pain in the upper abdomen not related to meals. Had never had any severe attacks of pain requiring a narcotic, had not been jaundiced and no clay-colored stools. In the past six months he had lost a great deal of weight and because of weakness and some unwillingness, had not worked for a year. Physical examination revealed a poorly nourished male who appeared his stated age of sixty-eight. There was evidence of loss of weight and he appeared chronically ill. There was a rather marked gingivitis. Heart was normal and B. P. 120-70. Lungs were clear. The abdomen was scaphoid. There was moderate tenderness over the gallbladder region but no masses were felt. Rectal examination was negative save for a 2 plus enlarged prostate. Laboratory work: Red blood count was 3,500,000 with 70 per cent hemoglobin. WBC and differential were within normal limits with a negative urine. Barium meal was negative for any ulcers or deformities and oral Graham-Cole test revealed a non-functioning gallbladder, but no stones were seen. Two days after admission he was given 500 cc. of whole blood and for the six days prior to operation, he was given 10 per cent glucose in saline twice daily.

On March 17, 1947, under gas-ether anesthesia, a laparotomy was done through a right rectus incision and a chronically inflamed gallbladder was found with numerous thick adhesions to the omentum. What was thought to be a stone was felt in the neck of the gallbladder as a solitary stone. No stones or dilatation of the common duct were noted. The gallbladder was removed without difficulty. One solitary enlarged but not hard gland was noted along the gastro-hepatic ligament. This was thought to be the result of a chronic cholecystitis. Upon opening the gallbladder, postoperatively, what was thought to be a stone was seen to be a thickened mass about the neck of the gallbladder, quite hard, white, and cut with some resistance. There was a plug of mucosa like material stained with bile at the mouth of the cystic duct. The wall of the gallbladder was thick-walled and there were areas of denuded mucosa. Microscopically, the lesion was a papillary adenocarcinoma and the wall of the gallbladder showed a chronic inflammation.

His postoperative course was uneventful. Sutures were removed on the tenth day and he was up and about and taking a full diet. On the fourteenth day he was discharged in good condition.

About one week following discharge, he developed a rather severe sharp pain in the region of the tenth dorsal spine and at that time an x-ray of the spine revealed a metastatic lesion of the tenth dorsal vertebra. At the present time he is in the hospital in fair condition save for the back pain. Dr. Berry did not feel there was anything to be gained by placing him in a body cast.

This case seems to bear out the conclusion of others that despite the fact that the lesion is small and fairly well localized, early metastases are the rule and by the time an operation is done it is too late. This man had a history of several years suggestive of a chronic gallbladder disease, although he is the exception to the general rule in that stones were absent. In retrospect, I do not think that the removal of the gland present at operation on the gastro-hepatic ligament would have affected the course of the disease.

Adult types of pulmonary tuberculosis have shown an alarming incidence among children of school age in all of the wartorn countries; tuberculosis of bone and joints has increased many times; miliary tuberculosis and tuberculosis meningitis in children are now common. In every children's hospital I visited I saw ward after ward of the victims of tuberculosis. In one small country, not atypical of others, I learned that to take care of the known cases of bone tuberculosis alone among children 7,000 new hospital or sanatorium beds were needed. They had only 500 when I was there. Martha M. Eliot, M.D., Am. Jour. Pub. Health, January, 1948.

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THERMAL AND CHEMICAL BURNS

PROCTOLOGY

DERMATOLOGICAL LESIONS

The Diagnosis and Treatment of Uterine Bleeding In the Nonpregnant Patient*

Virgil S. Counseller, M. D.,
Division of Surgery, Mayo Clinic
Rochester, Minnesota

I DO NOT suppose there is any subject one could choose to discuss that would be more valuable to the physician in general practice, or to one whose practice is limited to obstetrics and gynecology, than uterine bleeding in the nonpregnant woman. I am purposely going to exclude pregnancy (uterine or ectopic) and bleeding from retained membranes in order to reduce the scope of this discussion.

Much investigation has been done to obtain a clearer understanding of menstruation and its abnormalities and much progress has been made especially concerning hormone action and therapy. However, there is still much confusion and a considerable variation in the methods of treatment, particularly in the functional abnormalities of adolescence and the premenopausal and menopausal groups. However. functional bleeding must be differentiated from many organic lesions of the uterus and adnexa as well as some general constitutional diseases which cause uterine bleeding. This subject is being presented because a great number of conditions may produce uterine bleeding and because an accurate diagnosis is essential before proper treatment can be instituted.

Grant stated recently, in one of his papers, "that excessive or irregular menstruation constitutes a frequent problem that will sooner or later harass the doctor in practice and it is therefore essential to make some organized plan of investigation and treatment."

The conditions which commonly cause irregular or excessive menstruation might be enumerated for discussion under three classes: (1) general causes, which include blood dyscrasias, hypothyroidism and so forth; (2) functional causes, pituitary-ovarian imbalance; (3) local causes, including fibromyomas, chronic subinvolution, carcinoma, uterine polyps, adenomyosis (diffuse), ovarian functional tumors and ovarian disease.

The plan of investigation of each patient who presents herself with a history of irregular menstruation which has been definitely determined not to be associated with pregnancy should be well organized and sufficiently adequate to enable one to establish a diagnosis. An accurate statement of facts about the present irregularity, how long it has existed and the extent of the loss of blood according to the patient's estimation is important. Frequently, the statements of excess flow do not fit with the clinical findings. The chief value of the patient's statements is when they agree with the clinical findings and laboratory data. Menorrhagia which has lasted for several weeks without producing a drop in the hemoglobin and red cell count can not be considered alarming but one that has reduced the hemoglobin rather recently is a good index to the severity of the bleeding.

A thorough and gentle physical examination is most important. In addition to the pelvic examination, a routine roentgenogram of the thorax, an estimation of the red and white blood should be done. Some physicians consider a hemoglobin of 80 per cent as consisting a slight anemia, but those whose hemoglobins are less than 70 per cent cause us some concern and indicate the necessity of early correction of the blood loss. An increase in the sedimentation rate may indicate a malignant lesion but may be caused by pelvic infection, a twisted cyst with necrosis, acute degeneration of a fibroid, or a ruptured chocolate cyst. Determination of the basal metabolic rate should be a routine procedure in the adolescent group but is not so important in the older patients unless there are other signs of hypothyroidism. They must not have clinical evidence of myxedema but do have lowered basal rates.

The age of the patient is an extremely important factor in the investigation of these patients. Menstrual irregularity of young girls is most frequently found to be on a functional basis—that is, a pituitary-ovarian imbalance—while in the premenopausal and menopausal groups it may be on the same basis but can be due to associated pelvic pathologic conditions or a combination of the two. A beginning ovarian failure or dysfunction in a woman of 35 years who has always previously menstruated regularly and normally becomes a very serious problem to her and a very difficult condition to treat adequately and satisfactorily. She hesitates to have her womb removed and particularly does not wish to have anything done that would interfere with her sex life. However, if the uterine bleeding is found to be due to a malignant lesion the patient will accept any treatment recommended.

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A good pelvic examination, to me, requires considerable skill in that it must be conducted gently and slowly. A bimanual examination is the most useful, but is of little value if the patient can not relax her abdominal muscles. I believe more information of importance can be obtained by having one finger of the examining hand in the vagina and one finger in the rectum, provided there is no rectal spasm or rectal disease. The weight of the pelvic organs can be quite accurately determined with this one hand alone; also, prolapsed tender ovaries or ovarian masses as well as retroversion can be outlined. The consistency of the cervix should be noted with the index finger before it is inspected by direct vision. There is a little tactile sensation produced by cancer that can be learned only by experience and that seldom fails. Most physicians are probably more familiar with the touch of the soft cervix of pregnancy since it is more common. The former is much more serious and should be learned by every physician. However, there is no substitute for direct inspection of the cervix and it should be done in every instance. Cervical biopsies of every suspicious region should be done and now the Papanicolaou stain for cancer cells is most important.

Bleeding from the urethra may be mistaken for vaginal bleeding by the patient. Recently a patient complained of irregular vaginal bleeding because each time she urinated she noted blood in the toilet and on the toilet paper. The results of vaginal examination were entirely negative and a cystoscopic examination, which was requested by the gynecologist before curettage was done, revealed a carcinoma on the urinary bladder.

General causes of uterine bleeding, such as blood dyscrasias and hypothyroidism, have been fairly well understood and treated for many years. As early as 1917, H. S. Plummer recognized a group of patients who had low basal metabolic rates without clinical evidence of myxedema. Some of these patients had menorrhagia. Haines and Mussey reported that 73 per cent of these patients were improved on thyroid medication. Since this time thyroid medication has had a rather generous application in management of menstrual disturbances with or without the alterations in the basal metabolic rate. Royston recommended its usefulness in improving the feeling of menopausal patients by keeping the basal rate slightly above normal. Also, Winther found that of 5,210 women examined at the University of Minnesota from 1935 through 1945, 1,667 (32 per cent) had irregular uterine bleeding and that 62 per cent improved on thyroid medication, plus a high vitamin diet.

Among other general causes producing irregular menstruation one must mention starvation with vitamin deficiency, hemorrhagic purpura, toxic purpura, jaundice and any disease which produces ascites and passive congestion.

Functional menstrual disturbances

Functional menstrual disturbances may be encountered at any age during the menstrual life of the patient. More than 50 per cent of patients with this type bleeding are between 40 and 50 years of age, while 5 to 10 per cent are in early adolescence. Many patients in the latter group who have this type of bleeding complain also of sterility. In the young women the bleeding is characterized by a tendency to more frequent, more profuse and more prolonged menses. These periods may continue constantly for weeks and months. In the true functional case there is usually a history of irregularity from the onset of menstruation.

The hormone producing glands which, so far as we know at the present, control these irregularities are the pituitary, thyroid, and ovaries. The adrenal gland may play a part in the menopausal group. Until recently a difficult problem was to determine which gland or glands were at fault. Endocrinologists everywhere have been hard at it to simplify this problem, and it is becoming somewhat clearer. Treatment should not be started until a fairly clear concept is obtained as to the primary cause.

We have assumed for some time now at the Mayo Clinic, through the studies of Drips[2] and others, that women who had almost no symptoms associated with their menstrual irregularity other than sterility belonged to the primary failure group. These women may have a lowered basal metabolic rate and the menses may cease for a long time, then start in again and continue to flow for weeks and yet the patients have no other symptoms but bleeding and sterility. Drips found that 50 per cent of these patients were improved on administration of thyroid extract alone and that if in addition the patient was given low dosage roentgen treatment over the pituitary and the ovaries 75 per cent were satisfactorily improved.

There is also another group of women, according to Drips, who complain of menstrual irregularities and sterility plus many subjective symptoms and objective signs. This group she called the primary ovarian failure group, as the subjective symptoms are the same as those associated with the true climacteric which is known to be associated with normal ovarian failure. These women experience also sore breasts, menstrual pain and backache, and migraine-like type of headache. There is much nervous irritability before their periods and some experience hot flushes at times during the menstrual cycle. Some experience skin disturbances such as acne, herpes, angioneurotic edema and urticaria.

There will be many cases, of course, of the milder types of glandular dysfunction in which it will be difficult to distinguish whether there is a primary pituitary or primary ovarian failure. It is in this group that Drips[2] expressed the opinion that estimation of urinary prolan is most helpful. In women with pituitary failure it is rare to demonstrate any prolan in the urine. Urinary estrin is much lower than normal and may be absent. On the other hand, in women with primary ovarian failure, such as those in menopause, the prolan in the urine is in excess of normal. In normal menstruating patients the urinary prolan averages 10 to 20 rat units to the liter, so that if the gonadotropic hormone is found in amounts greater than 20 rat units to a liter, the failure is probably with the ovaries, for with complete ovarian failure the content of gonadotropic hormone rises to 66 rat units or more to a liter. The physical findings of the uterus and ovaries in patients with irregular menses and excess of urinary estrin or folliculin are important, The uterus is usually larger than normal and the endometrium, as it is removed by curettage, is abundant and of the hyperplastic polypoid type. The ovaries are frequently cystic. These ovaries produce more estrogenic hormone than normal, which therefore increases the proliferation of the endometrium. The luteal hormone is not produced in sufficient amounts, because of lack of formation of normal corpora lutea in the ovaries. The endometrium remains in the proliferative stage and does not go over into the premenstrual or secretory phase. It is obvious therefore that one has a thorough understanding of the physiology and of the histologic picture of the endometrium before undertaking treatment of these patients.

The treatment of functional bleeding is similar in many respects in most institutions and depends on the severity of the bleeding and the age of the patient. In the young adolescent with symptoms only of irregular bleeding at least can be improved on thyroid extract medication only as shown by Winther[13] Haines and Mussey,[4] and Drips.[1]

Grant advised that a curettage be done in all patients and that in some of them who have been bleeding only a short time a curettage is all that will be necessary. Why this will cure some seems to be unexplained. In the more prolonged bleeding cases in addition to the curettage he suggested the following routine which seems to me a sound method. After the curettage he waits one full week, then gives by mouth a 5 mg. tablet of stilbestrol each evening for a total of five evenings. Then during the next five days he gives, in addition to a 5 mg. tablet of stilbestrol, an injection of 10 mg. of progesterone each night. This brings the patient seventeen days after the last menstrual bleeding. Two or four days later menstruation will begin. He advises that this treatment be continued until a biopsy shows secretory endometrium. The purpose is to stimulate the pituitary gland to cyclic activity.

At present in the clinic in the cases of functional bleeding in which endometrial biopsy reveals a persistent proliferative phase of the endometrium, we are inclined to try the synthetic luteal hormone, pranone, which can be given orally. The dose is 10 to 20 mg. daily for one week. Administration is then stopped. It is used as substitution therapy from the fourteenth to the twenty-fourth day of the menstrual cycle.

In the continuous flow some physicians prefer to give large doses of stilbestrol until the flow stops. This is accomplished by overestrogenation or suppression of the pituitary. After this the patient may be carried on with both hormones, stilbestrol and pranone, given cyclically for two weeks each month in the effort to establish a regular cycle.

Wilson favors the administration of premarin (estrone sulfate) instead of the synthetic stilbestrol in the treatment of functional bleeding of young women. His method is to give by mouth one tablet of 1.25 mg. three times a day for the fifth to the twenty-fifth day of the cycle inclusive. Then on the tenth to the twenty-fifth day inclusive, he gives in addition 10 mg. of pranone by mouth. This treatment is to be continued for a period of three months. This medication has several advantages in that it is all administered orally and is very flexible so that the dose can be doubled if it seems wise to do so.

Anterior pituitary-like preparations (antuitrin S) is favored by many physicians since it contains follicle—stimulating and luteinizing properties and is particularly useful in the pituitary failure type of irregular bleeding.

Testosterone propionate is sometimes used in severe bleeding, and is preferred by some to progesterone. Novak says it gives him better results than progesterone or pregnancy urine preparations. It is administered in 10 mg. doses three times a week.

When one encounters extreme functional bleeding with marked secondary anemia and exhaustion, the patient is not one for office treatment. It is perhaps best to consider the patient for emergency treatment and send her to a hospital. After the usual preliminary tests are done, including blood typing and grouping, a thorough curettage should be done. If blood continues to ooze from the uterus rather freely the uterus should be packed. One or two transfusions will be most useful and hasten convalescence. In a fair percentage of patients this is all the treatment that will be required. However, after a study of the endometrium is complete, a course of hormone therapy, rest and high vitamin diet are usually the better method to pursue.

Medical treatment in these functional bleeding young women is not always satisfactory and more radical measures must be instituted. More than a decade ago Watkins and Mussey[5] treated seven young women for functional bleeding by injection of snake venom. All of these patients failed to respond to the usual medical measures in vogue at that time but all responded or were cured by snake venom. More useful hormone substances have been introduced since then and snake venom is not used as frequently as during that time.

An occasional patient fails to respond to any medical therapy including snake venom. In such instances hysterectomy is indicated and it is about the only type of case of this nature where it is indicated. Yet if such a uterus is examined in the pathologic laboratory it would be considered to be normal. Obviously, it is not normal but histologic study so far at least will not explain why the endometrium leaks blood continuously—without the presence of some pathologic lesion. This same situation may more often prevail in the premenopausal and menopausal group of bleeding cases, where it is considered best to remove the uterus rather than to administer intra-uterine radium or roentgen therapy to stop the bleeding. The most pathologic condition seen in some of these uteri is a hyperplastic and polypoid endometrium. The surgical notes should be ample and contain the explanation for the hysterectomy.

Submenopausal doses of radium therapy have been recommended for functional bleeding in young women but there is considerable variation of opinion concerning the advisability of their use. All authorities agree concerning the effectiveness of radium in controlling the bleeding, but fertility is lessened and there is some danger of destroying menstrual function. In most institutions it seems to me that irradiation of young women for functional bleeding has largely been replaced by intensive hormone therapy.

The treatment of functional bleeding of the menopause is a different problem except in beginning ovarian failure in the late thirties when one's effort should be directed to restoration of cyclic activity by hormone therapy. From the age of 44 years on, it is a question of positive diagnosis, reassurance, if there is no organic disease, and substitution therapy only if necessary to check the flow and to improve the subjective symptoms of the menopause which are thought to be due to the high urinary estrin which may reach as high as 66 rat units or more per liter.

Often treatment merely becomes a question of stopping the bleeding and many gynecologists prefer to give a menopausal dose of intrauterine radium, which we estimate to be 1,200 to 1,800 milligram hours of radium therapy as an adequate dose. Since quite a large group of women fear radium and its consequences for conditions other than cancer, I have been doing an increasing number of vaginal hysterectomies, preserving the normal ovaries for what function of internal secretion they may have, combined with any vaginal plastic repair that may be indicated. I have been tremendously impressed with the efficacy of this treatment and how long it will be before some show any subjective evidence of the menopause. Furthermore I believe that it is much better to have the uterus completely removed if the patient of more than 45 years is to be treated intensively with hormone therapy to correct the nervous irritability or the atrophy of tissue, incident to the menopause, because it is not known yet whether or not some of these hormones may be carcinogenic at this time of life. I have very strong suspicion that they do have such action but I do not have positive proof yet.

Bleeding from organic lesions of the uterus is most commonly due to uterine fibromyomas. In a series of 200 cases of abnormal uterine bleeding studied by Mussey and Wilson, this lesion was present in 40 per cent. However, it must be remembered that not all uterine fibroids produce symptoms. Probably only about 20 per cent produce symptoms and require treatment. The fibroid that has worked its way to a submucous position and the one which becomes pedunculated in the uterine cavity produces the most severe uterine bleeding. The bleeding may be of the gushing type and it is more common to see anemia in these patients, in some cases rather severe. If the fibroids are also numerous, a condition which may cause pressure, or disturbance in the blood supply of the ovaries, the bleeding may be metrorrhagic as well as menorrhagic.

The treatment consists of being sure there is not any associated malignant lesion, then performing myomectomy or hysterectomy, or giving radium or roentgen therapy. There is a definite place for myomectomy and it is advisable up to 35 years of age or up to 37 if the patient is still interested in future pregnancies. The patient should understand also that the chance of recurring fibroids which probably will require surgical treatment before the menopause is about 20 per cent. The operation of myomectomy can be more difficult than a hysterectomy, but some of these severe menorrhagias in young women are due to a single fibroid situated close to the endometrium and I believe the interests of a young patient are better served by performing myomectomy than by performing hysterectomy.

Sloughing and necrotic fibroids extending from the uterine canal or from the cervix cause excessive bleeding and foul discharge and often are mistaken for carcinoma. They are always associated with severe infection (cervicitis and endometritis) and therefore they should always be removed vaginally. Perhaps there are also multiple subserous fibroids which require abdominal hysterectomy but this should be delayed until the inflammatory process in vagina and uterus has subsided. The vaginal removal of the one fibroid will control the bleeding in most instances.

Hysterectomy for bleeding fibromyomas can be accomplished by either a total abdominal or supracervical abdominal hysterectomy and vaginal hysterectomy. I think the most important problem here is to study the indications and perform that type of hysterectomy which seems to be required in the particular case. I feel certain it is wrong to do a routine procedure for any given lesion. Total abdominal hysterectomy is performed in our institution in about 85 per cent of these patients requiring abdominal hysterectomy for fibroids. Vaginal hysterectomy is frequently done for small bleeding fibroids, especially if other vaginal plastic procedures are indicated also. Large fibroids can be removed vaginally but it is more difficult as well as time consuming. There is also an increased risk of injury to the bladder and ureters by attempting to remove large fibroids in this fashion, especially if the fibroids are close to the ureters.

Radium and roentgen therapy have a place in the treatment of bleeding uterine fibroids, especially in a patient more than 45 years of age. However, this treatment, I believe, should be confined to small fibroids and cases in which there are no other indications for surgical intervention.

Carcinoma of the uterine fundus is usually regarded as a postmenopausal disease but I have seen it in patients in their thirties and who still have regular menstrual periods. It is then a problem to be differentiated in the nonpregnant patient. Bleeding, however, is usually not severe but becomes continuous. This is in contradistinction to carcinoma of the cervix, which bleeds profoundly at times. The cervical lesion becomes extremely vascular, friable and indurated.

The treatment of carcinoma of the fundus I consider to be primarily surgical. It consists of total abdominal hysterectomy with bilateral salpingo-oophorectomy. If the lesion is of more than stage 1 and more than grade 1 we give a subsequent course of roentgen therapy. We do not as a rule give a preoperative dose of intra-uterine or roentgen therapy. In a few cases in which abdominal hysterectomy would be contraindicated on account of general conditions such as severe cardiac disease, obesity, and so forth, we treat the patient by radiation therapy alone. In some cases, vaginal hysterectomy with removal of the adnexa is more useful than abdominal hysterectomy.

The cervix is the most common site of the female genital tract, so that its incidence in producing irregular and severe vaginal bleeding may be high. Such lesions must be regularly sought for by inspection, palpation and multiple biopsies.

Radium and roentgen rays are the most effective treatment in the majority of cases of carcinoma of the cervix. Wertheim hysterectomy is sometimes indicated in a carcinoma of the cervix, stage 1. Taussig has recommended the removal of the pelvic lymph nodes in a few weeks subsequent to the radiation therapy. I believe that this procedure is a very good thing and that it will give a higher incidence of five year survivals than without it.

Uterine polyps are usually associated with uterine fibromyomas but may not be. The uterine bleeding is a spotting rather than a severe metrorrhagia. If the bleeding is profuse and due to a polyp, then the polyp is large and sometimes ulcerative. Polyps are not usually associated with malignant lesions, but I am firmly convinced that a uterus that continues to produce endometrial polyps should be removed.

Cervical polyps rank next to cancer as a cause of cervical spotting and bleeding. Contact bleeding is usually from this source. These conditions may coexist in the same patient.

A solitary adenomyoma of the uterus that becomes infiltrated with blood will be productive of menorrhagia. It is more sensitive on palpation during menstruation than is a fibroid. Treatment consists of hysterectomy or menopausal radiation. Diffuse endometriosis that produces ovarian destruction and ovarian failure will cause irregular uterine bleeding. However, irregular uterine bleeding is not usually associated with endometriosis.

Chronic subinvolution, or failure of the uterus to return to its former state subsequent to pregnancy, is caused by congestion, usually from displacements. This condition is seen too in fixations of the uterus as seen following pelvic infections and endometriosis. The uterus cannot contract. It becomes hypertrophied and edematous. Hysterectomy is usually the best surgical treatment.

Among the ovarian functional tumors that produce uterine bleeding must be mentioned the granulosa-cell tumor. This can occur at any age but the majority occur after the menopause and are characterized by restoration of the menstrual cycle. The uterus becomes firm and enlarged. The endometrium is hyperplastic and abundant. Usually the tumor can be palpated. The treatment is panhysterectomy.

Ovarian cysts and neoplasms rarely produce abnormal uterine bleeding unless they are associated with other conditions which may interfere with ovarian function. This is one of the reasons why an ovarian malignant lesion is such a serious disease because it does not produce some symptoms until metastasis has taken place. However, all cystic masses of the ovary should be looked on with considerable suspicion of malignancy after 35 years of age.

In conclusion I wish to emphasize that uterine bleeding is always important and needs to be carefully investigated, so that appropriate treatment can be instituted. It may be due to general constitutional disease, to a functional cause, such as pituitary-ovarian imbalance or to organic causes, or there may be a combination of these causes. Organic disease must always be excluded before the condition should be considered functional.

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The Changing Concept in the Treatment of Toxic Goiter, with Case Reports

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THE MORE proper title for this paper would possibly be the Changing Concept in the Preoperative treatment of Toxic Goiter, for we all agree that the proper treatment of toxic goiter is subtotal thyroidectomy. What I am thinking of primarily is the newer concepts of the use of propylthiouracil and thiouracil to prepare these patients adequately for operation by practically eliminating long hospital stays before operation, multiple stage operations and the thought of having to steal the gland from the patient, as well as the minimum amount of hemorrhage associated with use of these drugs with Lugol's solution and the rare recurrence since their use was invoked. A close observation should be made of patients taking these drugs as serious complications have been reported consisting of neutropenia, granulocytopenia, fever, skin eruptions and enlargement of the salivary glands. These occurred in nine per cent of Bartel's series with thiouracil and twenty-eight per cent in a group treated with thiobarbital. These reactions may occur seven or eight days after withdrawal of the drug and as late as the ninth month after beginning treatment on as low as .2 gm. of thiouracil. This is the reason for stopping this one week prior to operation. Penicillin is the antidote. In Bartel's experience in patients with small glands who have had the disease for a short time remission may be accomplished. How long they will last no one yet knows. Recurrence follows the withdrawal of the drug in patients with large glands who have had the disease a long time. In our small series of cases we have noted no ill effects from the use of these drugs.

I would like to say that the basis for this work is definitely attributed to the following influences. (1.) The association with a large number of goiter patients while interning in Cleveland, Ohio, and the inspiration of the leader in the field of thyroid surgery there. (2.) The further study and influence and inspiration gained from Dr. Hugh Gamble and his clinic in Greenville, Miss., where a great many goiter patients are treated as a goiter belt exists there also. (3.) The opportunity afforded me in the beautiful operative technique of Dr. J. William Hinton, at Post-Graduate Hospital, New York City. (4.) An opportunity of observing and handling a large number of Italians with goiter in Italy during the recent world war. (5.) The generous supply of propylthiouracil furnished me for clinical trial by Eli Lilly and Co. before it was placed on the open market during the last year. (6.) The influence exerted by the American Association for the Study of Goiter as to the exact pathological state found in these glands after the use of thiouracil and Lugol solution.

belt exists there also. (3.) The opportunity

Since March 1947 we have seen twenty-three patients with goiter in our clinic. One of these was a recurrent goiter having been operated on over 17 years ago. This recalls to my mind a paper given at the last meeting of the American Association for the Study of Goiter by Dr. Arnold Jackson of Madison, Wisconsin. He took 100 cases that he had operated on twenty years ago and of these 100 cases only one had a recurrence. An excellent record, especially, when one considers that these were all cases done prior to the thiouracil era. This proves that a good thyroidectomy is essential. But good thyroidectomy plus use of these drugs is even better.

Dr. Frank Lahey has beyond a doubt had the largest experience with goiter of any living individual in this country. It is reported that Dr. George Crile, Sr., personally performed 25,000 operations on the thyroid gland. In his recent Bigelow award lecture Lahey chose surgery of the thyroid gland for his subject and gave his life's experience with this disease. He and his group have done 23,000 thyroidectomies on 22,000 patients with a mortality of less than 1 per cent. When one reads of such a magnificent experience, it makes one realize how little is generally known in handling goiter. Dr. Lahey stresses the value of the thiouracil group in cutting down the incidence of multiple stage operations. According to him these drugs have practically reduced multiple stage operations to nil.

The operative technique has been pretty well standardized by all recognized surgeons today, but most surgeons have a few little eccentricities and individualities about it that we feel is of great help. The simplest technique is, usually, the best one. The best article that I have ever read on the technique for thyroidectomy is one by Dr. Alfred Noehren of Rochester, New York, which is published in February 1947 issue of Surgery, Gynecology, and Obstetrics in which he stresses the value of the Crotti retractor, the importance of simple, but adequate draping of the operative field, the value of sharp dissection and the use of the peanut gauze wiper to wipe off the posterior capsule. He only uses luminal for his basal anesthesia gr. 3 the night before and three hours before operation. Dr. Noehren has had a very wide experience in thyroidectomy and stresses the use of small hemostats and instruments to be used in this operation and that these are not to be used in any other operation. I have followed his procedure to the letter and have been gratified with results obtained. We use skin clips, half of which are removed on the third postoperative day and the remainder on the fourth postoperative day. There has been no separation of the incision or accumulation of serum that we used to sew with the subcuticular suture of catgut. Number one chromic catgut is used to ligate the superior and inferior thyroid arteries and the middle thyroid vein. 00 chromic catgut is used to ligate the smaller vessels. No drains are used. In none of our cases have we found it necessary to cut the ribbon muscles of the neck. Some surgeons make a transverse incision across the deep cervical fascia, which gives more relaxation. This we have not found to be necessary. Nor have we had to ligate the anterior thyroid veins. The Lahey traction forceps have greatly facilitated the ligation of the superior and inferior poles. We have not found it necessary to run from one side of the table to the other to secure adequate exposure. Some surgeons do, but this added confusion and unnecessary manipulation has not been our experience. The usual Kocher incision is used and a light gauge adhesive dressing has been found adequate. None of our patients have had to come into the hospital for long preoperative preparations. And all have been discharged on the sixth postoperative day.

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*Delivered at the meeting of the Mississippi Chapter of the American College of Surgeons, Jackson, Mississippi, May 10, 1948.

These cases have come into the hospital one or two days prior to operation as they have all been prepared by propylthiouracil and Lugol's with bed rest in their homes. The metabolic rates are done weekly in the clinic.

We have only operated upon about half the cases of goiter that we have seen mainly because we have not felt they were toxic enough to necessitate an operation. The ones that are not operated are not treated medically but they are being closely watched with metabolic check-ups and should it increase markedly they will be advised to have a thyroidectomy. There was one case in this group that we refused to operate on because she had in addition a hypertension, a splenomegaly and bilateral renal calculi. There was one case in this series who had the highest initial B. M. R. that we have ever heard of. Her B. M. R. on arrival at the clinic was a plus 83 and her E. K. G. showed a grade 3 myocarditis, and a pulse of 140. On digitalis, bed rest, propylthiouracil sedation and diet this readily dropped to normal, a thyroidectomy done and her convalescence was uneventful. This was one of our recurrent goiter cases. I should like to say here that the severe thyroid crises we used to see before the thiouracil era are practically unheard of today. B. M. R. check-ups have been made on all these cases postoperatively and all have been normal. There have been no postoperative hemorrhages, tetany or recurrent laryngeal nerve injuries.

We are all familiar with the action of the thiouracil group of drugs on the thyroid gland. There is an increase of hyperplasia of the cellular elements of the thyroid and the individual cells become taller but with this there is a return to normal of the B. M. R. Then when Lugol's is given with the propylthiouracil, the columnar type cells revert to a more cuboidal type and involution takes place. Finally this becomes static on Lugol's alone after a week or so and then is the proper time for removal of the gland as hemmorhage is reduced to a minimum.

McKnight has recently reported a series of 1100 thryoidectomies, which were all prepared with Lugol's solution alone. He makes the statement that he sees no need to induce hyperplasia in an already hyperplastic gland and then have to bring about involution with Lugol's. We feel that thiouracil has its greatest benefit in the bad risk case, as in the recurrent case we reported here and in the severely toxic cases, especially in eliminating multiple stage operations.

One must remember that bed rest and sedation too have their beneficial effects on reducing the pulse rate and digitalis is mandatory in the thyro-cardiac with congestive heart failure. In 1939 we had one such patient who was a typical thyro-cardiac adenoma and had hypertension and pneumonia and after a course of digitalis, chemotherapy and oxygen she recovered. Later her thyroid adenoma was removed and she has had no more attacks of congestive heart failure although she does still have some residuals of myocarditis, about a grade 1.

One of our cases was a substernal goiter and was easily removed through the Kocher incision. We mention this to emphasize the importance of differentiating between the substernal goiter and the truly thoracic goiter. There have been cases where the surgeon thought he was dealing with a substernal goiter and it was really thoracic in location. In the true thoracic goiter the blood supply is not from the superior and inferior thyroid arteries and it can not be controlled through a neck incision. In this type too, frequently, there is danger of cutting the recurrent larnygeal nerve. In a routine subtotal thyroidectomy we usually see the nerve but when it is kept posterior to the capsule it is necessary to expose it to its entire length.

I have purposely omitted the use of radioactive iodine and the isotrophes as I know nothing about them. The use of these measures I am afraid will produce the same results as x-ray therapy on the gland, namely a myxedema, a measure that would only be of value in the severe thyro-cardiac or the diabetic, whose poor condition might possibly contraindicate surgery. The other condition that this type of therapy is likely to produce is a severe fibrosis and should operation be necessary afterwards, the danger of hemorrhages would make the technique annoying to say the least.

We feel that a complete reliance on the basal metabolic determination is basically wrong. The symptoms and physical findings of goiter should outweigh any laboratory procedure, and I am ~~sure~~ Dr. Arthur Hertzler's adage that tachycardia, weight loss and palpitation should outweigh the findings of the "old tin can" as he once put it. Nevertheless, most of us like to verify or refute the findings with metabolic studies. Probably, the most recent and accurate determination for hyperthyroidism is the protein-bound iodine. This test has been used by Curtis and Lahey and they both feel it is of especial value in the diagnosis of the occasional case of hyperthyroidism with a normal basal metabolic rate. Lahey says that the main disadvantage is that this test is a very painstaking and difficult one to perform, thereby increasing the chances for error. We have not had the laboratory facilities for using this test.

CASE REPORTS

CASE 1.

White female 42 years of age admitted to the hospital May 21, 1947, with a chief complaint of goiter.

Present Illness: Patient has had enlargement of the thyroid gland since childhood. Moderate in type of more pronounced on right side of the neck. She has the usual signs of toxicity, tremor, tachycardia and weight loss. Her initial B. M. R. was plus 42 dropping down to plus five and plus four on propylthiouracil for four weeks and propylthiouracil with Lugol's solution for one week and then finally Lugol's solution for one week. **Physical Examination:** Revealed an enlarged thyroid gland, especially on the right side. Nodular in type. Her heart revealed an irregularity with a slight murmur at the apex. Electrocardiogram revealed a myocarditis, grade 11. Rest of physical examination negative. **Preoperative Diagnosis:** Nodular toxic goiter (fetal adenoma)

A thyroidectomy was done May 23, 1947, with enucleation of the adenoma through a Kocher incision. The ribbon muscles were preserved and draping and surgical technique after Noehren was carried out. The hemmorrhage was minimal. Small bleeders were ligated with 00 chromic catgut and chromic 1 was used on the superior and inferior thyroid arteries and middle thyroid vein. No drain was used. Cervical fascia sutured with 00 catgut. Skin clips on the skin.

Postoperative convalescence was uneventful. Patient discharged on May 27, 1947. One-half of skin clips removed on the third postoperative day and all were out by the fourth postoperative day. She was kept on Lugol's solution, 10 drops three times a day for two weeks postoperatively. No symptoms, tetany, thyroid crises or respiratory difficulty occurred. Her postoperative B. M. R. was plus 4 and her postoperative electrocardiogram showed a complete disappearance of the irregularity. Her rhythm was regular but there was slight inversion of the T wave in lead 3.

CASE 2.

White female 41 years of age admitted to the hospital on July 31, 1947, with a chief complaint of choking and heart beating too fast.

Present Illness: For the past eighteen months patient had been suffering with a choking sensation in the throat, has been very nervous and with palpitation, dyspnea and weakness. Her appetite has been good but she has continued to lose weight. She had a supra-vaginal hysterectomy eight months previously for a fibroid uterus. This patient also has had considerable family difficulties and because of her emotional instability she was divorced from her husband recently and had been accused a psychoneurotic. Her B. M. R. has ranged from plus 42 to plus 14. She has been on propylthiouracil for four weeks and propylthiouracil with Lugol's solution for one week and then finally Lugol's solution alone for one week. **Past History:** She suffered from puerperal sepsis with the delivery of her first child. **Physical Examination:** Essentially negative except for an enlarged palpable thyroid movable nodule, non-tended in the midline. Rest of physical examination essentially negative except for absence of uterine corpus which was removed when hysterectomy was done.

On August 1, 1947, a subtotal thyroidectomy was done for a toxic goiter. The usual technique as outlined above was followed. Patient discharged on August 6, 1947, after having been on Lugol's solution for five days postoperatively. Her convalesence was unassociated with any hemorrhage, crises or respiratory difficulty. She has been followed in the office and her postoperative B. M. R. was plus 8. Her emotional instability has been completely relieved, so much so, that her husband has gone back to her and their family relations are normal.

CASE 3.

White female 40 years of age admitted to the hospital July 31, 1947. Her chief complaint was nervousness, choking spells, palpitation of the heart and weakness. For the past seven months the patient has had the above symptoms in addition to bulging of eyes and a fine tremor. Her B. M. R.s have ranged from plus 27 to plus 10. She was placed on propylthiouracil for four weeks and propylthiouracil with Lugol's solution for one week and then finally Lugol's solution for one week. **Past History:** On June 16, 1947, patient was operated on for intestinal obstruction due to adhesions. **Physical Examination:** Revealed enlarged thyroid gland, symmetrical in type, considerable exophthalmos with widening of the palpebral fissures and a lid lag. She also had a lack of wrinkling of the forehead on upward gaze and the rest of the physical examination essentially negative except for midline scar of abdomen through which a previous operation for intestinal obstruction was done.

On August 1, 1947, a subtotal thyroidectomy was done. The above technique followed without a drain. There was no serum collection postoperatively and no complications arose. She was discharged from the hospital on August 6, 1947. Pathologist report shows a hyperplastic thyroid gland.

CASE 4.

White female 43 years of age admitted to the hospital June 30, 1947, complaining with a recurrent goiter. **Present Illness:** This patient had been operated on 17 years ago for hyperthyroidism. Approximately three years ago she began to complain of increased sweating, tremor and bulging of eyes. These have all been exaggerated for the past year. Her initial B. M. R. was plus 83. This was the highest B. M. R. we have seen. She was very toxic and was immediately placed on propylthiouracil for six weeks, then propylthiouracil with Lugol's solution for two weeks and then Lugol's solution alone for ten days. Her B. M. R. finally dropped to plus 17. We felt that this was about as low as we would be able to get it and elected to operate on her at this time.**Physical Examination:** The neck revealed a very large goiter extending mostly into the left side of the neck high up under the mandible, downward to the sternum and lateral behind the sternothyroid muscle. She was placed in bed for the six-week preoperative period and given sedatives for rest. A loud systolic bruit was present over the goiter. The gland was firmly adherent to all surrounding structures. Her heart revealed a systolic murmur at the apex and the rate of 90. Blood pressure 140/96. The remainder of the physical examination was negative.

She was operated on July 2, 1947, at which time an incision of the old thyroid scar was done. The ribbon muscles had become markedly frayed and adherent to the recurrent goiter. The bleeding was rather profuse in the beginning and it was felt at one time that the operation would have to be concluded. However, a plane of dissection was located on the left side of the neck and through this area a large recurrent thyroid gland was removed. Pathological specimen measured 10x7x6 cms., hyperplastic goiter. Her highest elevation of temperature was on the third postoperative day, which was 101°. Highest elevation of pulse on the first postoperative day, 120, gradually tapered down to normal. Lugol's solution was continued for two weeks postoperatively and patient discharged from the hospital July 7, 1947. Her postoperative B. M. R. was plus 8. Her blood pressure returned to normal but she still retained a slight systolic murmur at the apex.

CASE 5

White female 35 years of age admitted to the hospital June 30, 1947. Her chief complaint was a lump in her throat. **Present Illness:** For the past two and one-half years she has noticed a gradual increase in nervousness, emotional instability, palpitation of the heart, tremor and weakness, loss of 15 pounds in the last six months. She has a palpable diffusely enlarged thyroid gland, smooth and movable. She too was placed on propylthiouracil for four weeks, propylthiouracil with Lugol's solution for one week and then Lugol's solution alone for one week. **Past History:** Had uterine suspension seven years ago. Her B. M. R. was plus 34, plus 20. Her final B. M. R. at the time of operation was plus 16. On July 2, 1947, a subtotal thyroidectomy was done by the technique as outlined above. No drains used. Skin closed with skin clips. Her postoperative convalescence was complicated by slight elevation of temperature on July 3, 1947, to 100.4°, pulse 90. This quietly subsided and patient discharged on July 7, 1947. Continued on Lugol's solution for two weeks postoperatively.

CASE 6.

White female 36 years of age admitted to the hospital on October 29, 1947, with a chief complaint of goiter. **Present Illness:** Associated with choking, gradual increased enlargement of thyroid gland for the past several years. Her B. M. R. ranged from plus 24 to plus 16. On October 31, 1947, a subtotal thyroidectomy was done for a toxic goiter. The usual technique was applied. No drains used. Pathological report was thyroid hyperplasia and exophthalmic goiter. Her postoperative course was uncomplicated and her B. M. R, eight weeks postoperative was plus 5.

CASE 7.

This case was so interesting and unusual I think it merits a brief resume here. It will appear in detail later in the **American Journal of Obstetrics and Gynecology.**

This patient, a colored female 34 years of age, was admitted to the hospital March 13, 1948, complaining of shortness of breath and tightness and fullness of the abdomen, so much that she could hardly walk. She was eight and a quarter months pregnant and her weight was 195 pounds. Her normal weight was 140 pounds. She had had twelve previous pregnancies with six stillbirths, the causes of which were unknown to her. A flat plate of the abdomen revealed a pregnancy which roughly corresponded to the calculated time of eight and a quarter months with a great deal of fluid present. The fetus was in the vertex position and fetal heart tones in right lower quadrant. A diagnosis of pregnancy, eight and a quarter months with a polyamnion was made and in addition an anticipatory diagnosis of a fetus with congenital defects was added. Labor was induced by rupture of membranes at 5 p. m. on February 14, 1948, and two blood transfusions given while this was being done. The blood pressure dropped to 80/60 but with oxygen and stimulants and Trendelenburg position it returned to normal. The fluid was drained off as slowly as possible, but it necessitated a constant changing of the bed sheets all day. She was returned to her room and treatment for shock continued. At 7 p. m. her pressure was well stabilized so she was returned to the operating room and a bag introduced into the cervix and inflated. She went into labor in four hours and at 5 a. m. the next morning she delivered a premature infant which gasped. The neck was seen to contain a large mass about the size of a golfball. The upper pole seemed to be cystic, so this was aspirated with no relief of gasping respiration. T thyroidectomy was then done, quickly, with no relief. The resusitator was being used on the the child while this was being done. The trachea was found to be completely collapsed. It was opened but the child showed no signs of reacting. A complete autopsy by a pathologist from the University of Mississippi revealed nothing of significance except the cystic mass from the neck which had been previously removed and a collapse of both lungs which had never inflated. There were no other congenital malformations. A basal metabolic rate on the mother six days postpartum was plus 36. She was placed on propylthiouracil and the B. M.

R. returned to plus 6 in three weeks. She was then placed on Lugol's solution for two weeks and advised to have a subtotal thyroidectomy and is now awaiting admission to the hospital.

Had this patient come in for prepartum care and a metabolic rate run on her and had she been given one of the thiouracil group of drugs and Lugol's solution a more accurately anticipated congenital defect diagnosis might have been made, and the child in all probability could have been saved.

We sent the specimen to the pathological institute at the University of Tennessee Medical School. They had had no case in their laboratories of this sort. We consulted Miss Margueriete Prime, the librarian for the college, and she was able to furnish us with only seven references of congenital goiter from the American literature but none associated with polyamnion in a mother with hyperthyroidism and a goiter in a premature infant. I am told that in Switzerland the condition is very frequent. In fact, in days gone by about every other infant was born with a congenital goiter. Since the use of iodine has been required in the water there the condition is still present but not nearly so frequent. There were many cases in Switzerland born of mothers who had no goiter or hyperthyroidism in the mother, these believed due to a thyrothropic hormone from the pituitary. The pituitary gland in this infant showed no abnormalities.

SUMMARY

1. The use of the thiouracil group of drugs in preparing patient for operation was discussed. The danger from the use of these drugs that may occur was mentioned
2. The technique of thyroidectomy was briefly taken up.
3. The pathology in the gland brought about by the action of these drugs was indicated.
4. A brief summary of six cases operated on out of a series of 23 goiters seen since March 1947 was given.

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EXHIBIT AT AMERICAN MEDICAL ASSOCIATION

The consultant program in south Mississippi, being conducted jointly by the Tulane University School of Medicine and the Mississippi State Board of Health in the field of pediatrics and obstetrics, was the subject of an exhibit which attracted considerable attention at the meeting of the American Medical Association in June. This consultant program which is a similar program carried out in previous years by obstetricians and pediatricians of other nearby medical schools over the past twenty years for the postgraduate instruction of physicians and of county health department staffs in Mississippi, has been in continuous operation in south Mississippi for the past ten months.

At the invitation of the Committee on Rural Health of the American Medical Association the exhibit pictured above was prepared. Since it was prepared at the request of the American Medical Association, the expenses of its preparation were met by this national medical organization, as shown by a photostatic copy of the check, also pictured above. Similar programs in the field of obstetrics and pediatrics in north Mississippi have been carried out jointly with the interest and cooperation of the dean and faculty of the University of Tennessee in recent months.

Respiratory Tract Infections of Virus Origin*

Frank M. Davis
Corinth, Miss.

The subject, Respiratory Tract Infections, is too broad for one to cover in a single paper. Those of virus origin chosen for this discussion are ordinarily called colds, grip, or influenza. They account for 15 per cent of office visits to general practitioners. Infections of the respiratory tract causes more loss of time from industry and schools than all other diseases combined. The average person suffers from one to four attacks each year. They are rarely a direct cause of death but they prepare the mucous membrane for the invasion of a secondary infection, notably the bacterial pneumonias, septicemia, meningitis, acute sinusitis, and other debilitating diseases.

The causative agents are harbored in patients and in asymptomatic carriers. Secretions are expelled as visible droplets by talking, sneezing, or coughing as minute, invisible exhaled particles which float around in the air like tobacco smoke. Those who are immune or who are resistant by reason of an intact mucous membrane or other factors escape disease; those who are susceptible become infected. Fast transmission from one patient to another steps up the virulence of the virus where slow or a prolonged time interval between cases causes the virus to become attenuated. Epidemics appear most frequently in our section in the late fall and winter, but we see a substantial number involving the gastro-intestinal tract in the summer. It is reasonable to assume that the causative agent is harbored in a seemingly healthy carrier between epidemics.

We have just experienced an epidemic of virus infections of the respiratory tract in our community. No race or age group is immune, but there have been ten cases in the white to one in the colored. There are many factors which might account for this high ratio, namely, economic; mode of living; frequency of contact with neighbors, etc. Specific immunity is an unknown factor except in influenza. Here again we do not know specifically the time this immunity will last, although it is believed to be one year, therefore it is advisable to repeat the influenza vaccine A and B every six months and even shorter intervals if there is an epidemic. Certain persons seem never to be attacked, others become resistant for long periods following an initial attack, while many have repeated bouts in a season. "Keep your resistance high" is a common phrase frequently heard in the doctor's office; yet robust persons in apparently excellent health contract diseases. Local resistance is in direct proportion to the condition of the mucous membrane of the naso-pharynx with its normal coating of mucus kept in motion by gravity and ciliary and muscular activity. A sudden fall in the body temperature accompanied by vasoconstriction of the mucous membrane apparently renders the tissue more susceptible to invasion by the virus. Local infections, ulcers, irritations from ill-fitting plates, and excessive smoking all undoubtedly favor early invasion.

This group of infections of the respiratory tract have many epidemiological, clinical, and pathological features in common. The histologic changes of the mucosa of the common cold are almost identical with those of influenza in animals and in man. Although there are many similarities, certain characteristics will predominate. One may limit its attacks to the nasal lining with profuse mucoid discharge at first (colds); one may cause sore throat (pharyngitis or tonsillitis); in one, constitutional symptoms predominate (grip); one is characterized by dry inflamed membranes with cough (viroid); and in another gastro-intestinal symptoms may predominate (intestinal flu; dysentery). Little progress can be made in classification until etiologic diagnoses are possible. The first steps in this direction were made by Kruse in 1914, who showed that colds were due to filterable agents. A virus was cultured by Dochez and later by Goodpasture. The greatest advances were the discovery of the virus influenza A in 1933, by Smith, Andrews, and Laidlaw and later, of influenza B by Francis and Magill. A newly isolated virus considered to cause about 60 per cent of attacks of virus pneumonia was isolated in 1941, by Eaton and his associates. In 1947, the virus of poliomyelitis was isolated.

Nothing specific can be done to shorten attacks of this group of disease in question, except influenza and little can be done to prevent them. Yet in some parts of the country

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(*Read before the quarterly meeting of the Northeast Mississippi Medical Society, Oxford, Mississippi, April 8, 1948.)

it is still "standard practise" to prescribe drastic purgatives; advise sweating, poulticing, gargling, cough prescriptions, and pills. These practices are costly to the patient, as well as harmful in some instances. In spite of the ineffectiveness of the sulfonamide compounds and of penicillin in virus diseases, these agents continue to be wasted in huge amounts in the treatment of virus infections of the respiratory tract. Nor are there any facts to justify their use routinely to prevent possible secondary bacterial invasion which occurs in the minority of cases. On the other hand, if one is reasonably sure secondary infection is present as a complicating factor treatment should be started immediately, selecting the most effective agent. Penicillin is less objectionable than the sulfonamides because of its relative lack of harmful side effects, but both agents if used too widely over long periods of time may give rise to strains of drug-fast pathogenic bacteria, resistant to treatment with either. The majority of these patients will have anorexia. This is of little consequence in a well-nourished patient when the course of the disease is short but it is of major importance in a debilitated patient and the duration prolonged. The diet should be wholesome, nourishing, and appetizing. Tradition favors the stimulation of excretion by the bowels, the kidneys, and the skin to "get rid of the poison," but there is no evidence that either effect is accomplished. Purgation may be harmful; it is unnecessary and exhausting. Suffice it to say that diaphoretics in the form of heat, blankets, hot lemonade, or mustard foot bath only increase the discomfort in certain infections already characterized by sweating. It is doubtful if acidosis, significant enough in otherwise normal patients, even occurs sufficiently to require treatment. This type of treatment has been exploited and widely advertised: "alkalize and prevent your cold." The general opinion now holds that a moderate degree of fever is beneficial in overcoming infections, yet acetanilid, acetophenetidin, quinine, aminophyrine, and salicylic compounds are widely used as antipyretics. They comprise the chief "break-up-a-cold" compounds. The analgesic effect of these drugs provides the only justification for their continued use. Counter-irritants applied to the chest or throat in the form of poultices, turpentine, mustard, hot fat, are not harmful if properly used but their effect and comfort can be furnished more easily by a hot water bottle or electric heating pad. Many patients demand a "cough mixture" or at least one to be prescribed by the doctor. Coughing is a symptom of the disease and serves a useful purpose and should not be checked unless it is harassing or exhausting. The popularity of many elixirs depends largely on the amount of alcohol they contain. If codeine is to be used it is better given alone. Expectorants may be irritating and should not be used during the inflammatory stage. Experiments show that potassium iodide, ammonium chloride, and creosote compounds do not change the volume or viscosity of the sputum. They tend to increase the flow of saliva and not of exudates. One may debate or wonder if it is desirable to increase the output of fluid in the majority of cases of infection of the respiratory tract, especially during the febrile period. According to experimental studies of Hamburger and Robertson the more fluid exudate and the greater its penetration to the depths of the lungs to which the infection may be carried, the more viscid it is, the greater the ease of its expulsion. The time-worn habit of mopping the throat with irritating antiseptics, such as silver protein compounds, silver nitrate, phenol and iodine, should be dispensed with because none can be effectively bactericidal or virucidal on mucosal surfaces without destroying the membrane as well. Even if they were effective, they are washed away a few seconds or minutes after their application by ciliary activity, and the flow of exudate. Strong solutions may cause harmful inflammation, destruction of tissue, and cilia, and the prolongation of the disease. Furthermore, antiseptics do not penetrate to the subepithelial tissue. According to Kully about two hundred and forty preparations of nasal vasoconstrictors or nose drops can be purchased. Their use increases neither the severity nor the duration of attacks and in some instances may prolong acute rhinitis. Although experimental evidence suggests that animals given diets deficient in vitamins are more susceptible to certain infections, there is little hope that optional nutrition or the addition of vitamins to the food of persons taking an average good diet will aid in the prevention of infection where infections of the respiratory tract are apparently caused by a variety of viruses, most of which have not been isolated, there is obviously no specific prophylactic vaccine against any except influenza A and B. The usual commercially prepared cold vaccines contain a mixture of bacteria which have nothing to do with colds, except perhaps as secondary invaders in a small percentage of cases. Extension controlled studies by Diehl and others have shown that cold vaccines, whether given orally or parenterally, do not prevent colds. According to Kaiser and Smiley, colds occurred in children or adults equally, whether or not their tonsils had been removed.

It would seem, from the preceding discussion, that little value is left for the treatment of this great group of diseases, which in a specific sense is true. Until the causes are discovered and specific therapy is developed there is nothing available to prevent attacks except in influenza, or to lessen the severity or shorten the duration of these infections. On the other hand a number of procedures are recommended to lessen the discomfort of the patient, to provide for unimpeded natural recovery, and to lessen the danger of complications. Treatment should never be standardized but should be suited to the needs of each patient. **Rest,** as for any other infection, is the best treatment for acute diseases of the respiratory tract, especially if fever is present, in which event confinement to bed is necessary. The amount of **food** and **fluids** may be suited to the patient's choice, that is unless dehydrated or debilitated. For **constipation** the diet should be adjusted and mild laxatives or enemas may be used. Aching and headaches are best controlled by warmth, rest in bed, and the commonly used salicylate compounds. Penicillin and sulfonamides are used only in the presence of suspected or known complications caused by bacteria susceptible to their beneficial effects. Nasal obstruction and running nose justifies the use of vasoconstrictive drugs despite the objections mentioned previously. In the majority of cases mopping of the throat and gargling is not advised. The treatment of cough depends on whether it is caused by irritation from inflammation or dryness in the upper passages or from the collection of exudate lower in the respiratory tract. **Inhalations** are good to diminish or stop coughs and particularly the dry type. Codeine in doses of five to ten milligrams is the drug of choice for quieting the overactive cough reflexes. Morphine may be used. Foreign protein may be given parenterally to combat leucopenia found in many of these cases. Secondary anemia, if present, should be corrected and in the severe cases blood transfusions given.

PLANS FOR MID-SOUTH POSTGRADUATE ASSEMBLY

The efficient secretary of the Mid-South Postgraduate Medical assembly, Dr. Henry B. Gotten, sends us the following list of speakers who have already accepted a place on the program for the coming meeting in February, 1948. These speakers are among the ablest and most outstanding men in medicine in America. The Mid-South was the first of its type to be organized in the southern part of North America. Others have followed and are following. We have keen competition now with New Orleans and Atlanta. The Mid-South was designed to give a review of medicine and surgery in an understandable form in a session of four days and nights. It has been very popular and it has gradually grown over the years. Memphis is a central place to meet, it has a fine medical center, the doctors are cordial, and the hotel gives splendid service. You can ill afford to miss the Mid-South. This year Mississippi's Dr. Frank M. Acree is president. It would be well to make your reservation now at the Peabody Hotel which is headquarters for the convention.—Ed.

1949

Appointments

A. H. Blakemore, Presbyterian Hospital, N. Y. — Surgery
Wm. Edward Chamberlain, Philadelphia — X-ray
Frederick A. Collier, Ann Arbor — Surgery
Arthur Curtis, Ann Arbor — Dermatology
Frederick H. Falls, Chicago — Obstetrics
John W. Harris, Univ. Wisconsin — Gyn.
Herbert H. Howard, Boston — Urology
Norman F. Miller, Ann Arbor — Obstetrics
Jas. L. Poppen, Boston (Lahey) — Neurology
McLaughlin, Harrison L., Columbia Univ. — Orthopedics
F. D. Figi, Rochester — ENT
John Lawrence, Univ. Cal. — Internist
Peter C. Kronfeld, Chicago
Wm. F. Reilly, Little Rock, Ark. — Pediatrics
Rynearson E. H., Mayo's — Medicine
Snell, Albert M., Mayo's — Medicine
Dr. Heyworth Sanford, Chicago — Pediatrics

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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THE A. M. A.

The American Medical Association held its annual meeting in Chicago June 21-25. It was a record meeting, 11,963 fellows being registered. The exhibits were the most elaborate yet seen, and television programs played a nice part. The American Medical Association is the biggest medical organization in the world by all odds.

Still a powerful voice, Dr. Fishbein is editor of the **Journal**; Dr. George F. Lull is secretary, his personality with his fine balance in every way being definitely felt in the organization; Dr. J. J. Moore is treasurer, all supporting Dr. R. L. Sensinich, new president of the organization. Dr. Ernest E. Irons is president-elect. The distinguished service medal was voted to Dr. Abt of Chicago with Dr. Seale Harris of Birmingham as second man. Dr. Seale Harris is the embodiment of Southern medicine and one of the most valuable and deserving medical personalities in this nation today.

The organization of the Academy of Practitioners was in strong evidence this year. This organization is destined to be the big power in the organization now it seems. It should serve a great purpose.

Like the old man who celebrated his hundredth birthday and declared he was starting out on his second hundred much stronger than on the first, the A. M. A. is starting strong on its second hundred and seems to have a new vision of service to the people. In influence and service to man, no group in the world can be of greater service in our civilization.

Dr. J. O. Crider, a native of Mississippi, has been promoted to a full professorship in physiology in the Jefferson Medical College in Philadelphia. Dr. Crider was assistant dean and professor of physiology in our two-year school at Ole Miss for many years. Dr. Crider really knows his subject as a teacher and is outstanding in every way as an educator in the field of medicine. We are sure he endorses our four-year medical school.

Attention is called to the shortage of doctors at the Veterans Hospital at Jackson. It does seem mighty bad that our war veterans do not have sufficient doctors to see and examine them. Note the offers for the positions open. Dr. H. C. Ricks of the State Board of Health emphasizes the importance of adequate response to this call.

Congratulations to Dr. Harvey F. Garrison, Sr., for winning the Cadillac given away at the A. M. A. in Chicago at the annual meeting in June. It is fitting that he have this fine car. He has been driving a Cadillac in organized medicine in the nation for many years.

The public night held on Wednesday evening of our state meeting made one of the very best features of the Association. It should serve to bring about a better understanding between the doctor and the public, serving both as a source of information and inspiration.

Dr. Duggar, with the State Board of Health, is making an effort to have all the people working in factories in the state examined by their family doctor, with the company employing them paying the bill. This seems like a most worthy effort. If every person would have a check up each year, many serious conditions would be screened out. Lend Dr. Dugger your hand on this proposition.

We are proud of Dr. James Grant Thompson in the field of dermatology and syphilology. He is a diplomate on the American Board of Dermatology and Syphilology. Mississippi is proud of him and his works as a native son. He is a fine student and a good worker in organized medicine.

News and Comment

FIFTY-YEAR CLUB COMING STRONG

The Fifty-Year Club in our state medical association is beginning to sit alone and coo. Dr. W. A. Evans is president of the club and he is putting into the club youth, vim and vigor. Plans are underway to have all the men eligible up to date "initiated" before the meeting is over in Biloxi next year, and to deliver the certificates and their fifty-year buttons to them. Public celebration for them will be held if they so desire. The public meetings are serving a fine purpose. It is serving as an inspiration to the medical profession, bringing about a better understanding between the public and the medical profession, stimulating patriotism, and doing honor to those to whom honor is due. Public meetings have been held for Drs. J. Rice Williams, G. S. Bryan, J. W. Lipscomb, W. A. Johns, W. L. Little, J. W. Crumpton, and W. H. Frizell. Certificates have been delivered to several others along with the fifty-year button. Dr. W. A. Evans, a native of Aberdeen and a citizen of the world, is the driving power behind the group. He has been in the practice more than sixty years. Dr. Felix J. Underwood is furnishing the certificates to the doctors. This is a very fine part for him to do. The editor has been giving the luncheons and furnishing temporary buttons. The system now underway is for each councilor to aid in finding and helping to secure buttons for certificates for every man eligible to the Fifty-year Club in his district. President Caldwell is to father the northern half and President-Elect O'mara the lower half. It is hoped that we may have a public meeting for several men in the Central Society in the early fall at Jackson and a meeting for ten to fifteen men on the public night at Biloxi at the state meeting next spring.

A CALL FOR VA DOCTORS

The Veterans Administration, Jackson, Mississippi, is in dire need of physicians in order that better service may be rendered to the disabled veterans of this state. These doctors are sorely needed in the following categories:

Hospital Physicians

Employees in this category serve in the hospital in the Department of Medicine and Surgery. Rates of pay for these employees are fixed by a Professional Standards Board, Veterans Administration, Branch Office No. 10, Dallas, Texas. These rates will be based in the individuals experience, background, and training. The rates are as following: Junior Grade, $4,479.60 per annum, Associate Grade, $5,322.00 per annum, Full Grade, $6,235.20 per annum, Intermediate Grade, $7,432.20 per annum, Senior Grade, $8,509.50 per annum, Chief Grade, $10,305.00 per annum.

Applicants interested should notify the Personnel Officer, Veterans Administration, Jackson, Mississippi, at which time application forms, with instructions, will be supplied by return mail.

Rating Specialist, Medical

Employees in this category will serve as medical members of a three-man rating board in the adjudication of pension claims for disabled veterans. These are civil service appointments and carry a salary of $6,235.20 per annum.

Physicians interested in these positions should file with the Personnel Officer, Veterans Administration, Jackson, Mississippi, Standard Form 57, "Application for Federal Employment," with special care that Items 18 and 21 are carefully completed. These application forms are available at the office of the civil service representative at any first or second class post office.

RESOLUTION

WHEREAS God, in his infinite wisdom has taken from our midst another valuable servant of the people in the person of Dr. W. R. Brumfield, we are reconciled to His divine judgement and action. and since

Dr. Brumfield, born in Pike County, and throughout his long and fruitful life gave willingly and freely of his time and profession to the people of Gloster and its surrounding communities, and even after infirmities had rendered him incapable of active practice, his presence upon the streets of his hometown afforded a continual source of pleasure and consolation to his many frinds who had great faith in him as a man, friend and adviser and as a great physician, this entire community mourns his loss, be it therefore

RESOLVED that a copy of this resolution be handed to the members of Dr. Brumfield's family; a copy be passed to the press for publication and a copy be spread upon the minutes of the Wilkinson-Amite Counties Medical Society—of which Dr. Brumfield was a charter member.

Respectfully submitted,
W. T. Thornhill, M. D., Designated Scribe

DEATHS

DR. E. L. GREEN

Dr. E. L. Green, of Carpenter, died at a Vicksburg hospital June 25. A native of Copiah County, Dr. Green practiced medicine in Carpenter most of his life. He was 80 years old and a member of the Baptist Church.

Survivors include his wife; two daughters, Mrs. Lex Templeton, Hollandale, Mrs. Mildred Russell, Carpenter; four sons, Homer Green, Everett Green and Frank Green, all of Carpenter, Albert Green of Clinton; one brother, T. W. Green, Jackson. A number of grandchildren also survive. Dr. Green was a graduate of Emory University, Atlanta, Georgia.

DR. W. A. TISDALE

Dr. W. A. Tisdale, prominent physician of Seminary, died Monday night at a Hattiesburg hospital after several weeks' illness. He was 86. He was a graduate of Tulane University.

Dr. Tisdale had been practicing medicine for 56 years and recently opened a clinic in Seminary and was the clinic's first patient.

Services were held at New Hope with burial in the church cemetery.

Dr. Tisdale leaves a son, Jimmy, of Corpus Christi, Texas, who is now employed in South America, and a married daughter living at Sumrall.

DR. W. R. BRUMFIELD

Funeral services were held at Gloster for Dr. William R. Brumfield, 80, retired physician, who passed away at his home following a long illness.

A graduate of Louisville Medical School in 1891, Dr. Brumfield practiced at Huron for seven years. He practiced in Gloster from 1903 until his health failed several years ago. Dr. Brumfield was proud of his profession and had engraved on his stationery, "a damned good country doctor and poor collector."

He served as a member of the Mississippi legislature from Amite County, and served as a member of Gloster's board of aldermen for several terms.

He is survived by his widow, Mrs. Julia Bates Brumfield of Gloster.

DR. JOSEPH S. GATLIN

Joseph A. Gatlin, physician and surgeon in Laurel more than 30 years, died June 14 following a heart attack. He was 61.

Dr. Gatlin was the third prominent member of the medical fraternity to die in Laurel in the past few weeks. Dr. H. G. McCormick, with whom Dr. Gatlin was associated for some time, died on May 23,

He leaves his wife, two daughters, Mrs. Margaret Wilby and Mrs. Betty Hill; a son, Joseph Savan Gatlin, Jr.; a brother, Ed Gatlin of Hinds, Oregon; two sisters, Mrs. Lula Denham and Mrs. Lillian Rogers, Laurel; three half-brothers and three half-sisters.

Dr. Gatlin was born in Jones County. He attended the Laurel schools and was graduated from Tulane Medical School in 1912.

and Dr. J. B. Jarvis died May 3.

Dr. Gatlin served his internship in Charity Hospital, New Orleans, and returned to Laurel to practice. Shortly thereafter he married Miss Stella Morris, formerly of Bay City, Michigan, on February 12, 1913.

He served in World War I with the Medical Corps.

Dr. Gatlin was a member of the American, Mississippi, and Jones County Medical Associations, the American Legion, Veterans of Foreign Wars, Presbyterian Church, Masonic Order, and the Laurel Kiwanis Club.

DR. J. B. JARVIS

Dr. J. B. Jarvis, beloved physician and civic leader of Laurel died May 31.

Dr. Jarvis was born in Kemper County where he lived until he heard of the thriving sawmill town of Laurel and decided to tie his future with this fast growing community in 1901.

He was graduated in medicine from the Memphis Medical College, Memphis, now known as the University of Tennessee, and started his practice in 1893.

Two years later he married Miss Jennie Clark in Kemper County. Many Laurel friends helped that happy couple celebrate their golden anniversary on March 14, 1945.

Both Dr. and Mrs. Jarvis have taken the lead in many civic movements started here for general betterment. They have been an influence in the church and the religious life of the city.

He was a member of the Masonic lodge and the Shrine, the American Medical Association, the Mississippi Medical Association and the First Baptist Church.

Besides his wife he is survived by a sister, Mrs. L. H. Kellis, Shuqualak, Miss., and a number of nieces and nephews.

DR. H. G. McCORMICK

Services were held May 25 for Dr. Henry Garnsey McCormick, who for half a century had practiced in Laurel.

He was 80.

His twin brother, Robert McCormick, a druggist, also of Laurel, died July 25, 1943.

The brothers went to Laurel when first established the community lumber interests more than 50 years ago. Dr. McCormick was the mill's physician and his brother operated a drug store. They were natives of Clinton, Iowa.

He leaves five daughters, Miss Amanda McCormick and Miss Mary McCormick of Laurel, Mrs. Ollie Neil Cowart of Savannah, Ga., Mrs. Hal Atkinson of Laurel and Mrs. Francis Dee Barbour of Baton Rouge; a son, Henry G. McCormick of Milwaukee, and a sister, Mrs. F. E. Nagel of St. Petersburg, Fla.

Dr. McCormick was a member of the American College of Roentgenology, the American Medical Association, the South Mississippi Medical Society, the Mississippi State Medical Association and the Presbyterian Church.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY—Vol. 44, No. 1, July, 1941; Vol. 44 No. 2, August, 1941.

EPITHELIAL CYSTS OF THE SKIN — W. Nurmberger, Frankfurt. Ztschr F. Path. 52:448, 1938

HEMANGIOMAS OF THE SKIN—G. E. Ward and E. E. Covington, J. A. M. A. 114:2069 (May 25) 1940.

One hundred and seventy-eight epithelial cysts of the skin were examined; 121 were epidermoid cysts, 40 were dermoids and 17 were classified as traumatic epithelial cysts. The author stresses the rare findings of a foreign body granuloma as a result of rupture of a squamous cell-lined cyst, with the presence of cholesterol crystals and xanthoma cells. Such a granuloma, termed lipophagic foreign body granuloma, has been described, according to the author, only three times. Simple epithelial cell hyperplasia and atypical proliferation of epithelial cells were present in 6 per cent of the cysts examined. Five benign squamous cell tumors were encountered. In 7 instances the author found squamous cell carcinoma arising in these cysts.

—O. Saphir. (Arch. Path.)

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Basing their conclusions on their experience in treating 127 hemangiomas present in 94 patients, Ward and Covington consider that radium is usually the treatment of choice but that solid carbon dioxide and electrodesiccation are also occasionally useful. With 40 per cent of the hemagiomas treatment was followed by no disfiguring scar and there was an excellent cosmetic result. With an additional 47 per cent the results were satisfactory but not perfect from the cosmetic standpoint. With 13 per cent the results were classed as poor, and Ward and Covington grouped these lesions as follows: (1) port wine stains which were radioresistant, (2) hemangiomas in adults and (3) organized remnants, telangiectasia, atrophy or loss of hair.

PENICILLIN IN TREATMENT OF EMPYEMA IN CHILDREN—Prince, George E. and Temple, William J.—American Journal of Diseases of Children, 74:447, October, 1947.

“Thoracic empyema has been treated by surgical drainage for many years, and until the advent of penicillin other methods of therapy were comparatively ineffective. The intrapleural and parenteral use of penicillin has recently reduced the necessity for surgical intervention. Although the results have been satisfactory in many instances, certain limitations have been noted. Recurrence of the empyema and failure to eliminate the cavity after sterilization have been reported. The incidence of these and other sequelae can be reduced if proper evaluation of the case is made before treatment is begun. The following conditions have been established as necessary for successful treatment of empyema with penicillin: The causative organism must be susceptible to penicillin; it must be possible for the penicillin instilled into the empyema cavity to come into contact with the organism; the cavity must not contain pieces of necrotic lung tissue or large clots of fibrin; no anatomic condition, such as bronchial fistula, which can cause reinfection of the cavity or allow the penicillin to escape, may be present; the lung must be capable of re-expanding.

“Nine cases of empyema in children have been treated by the writers with varying amounts of penicillin. The ages of the patients ranged from 5 weeks to 5 years. There were six boys and three girls. These patients required surgical drainage after unsuccessful penicillin therapy. Six patients responded well to medication and surgical intervention was not necessary. Staphylococcus aureus was the causative agent of the empyema in four patients and Pneumococcus in two patients. In one patient Hemophilus influenzae was observed after surgical drainage, but this organism was not believed to have been the etiologic agent.

"All but three patients had received one of the sulfonamide drugs prior to admission to the hospital. Two patients received none of the chemotherapy after use of penicillin was discontinued. One patient of the latter group was given only a small amount of penicillin, and recovery was possibly due to the sulfadiazine. Only one patient received penicillin and a sulfonamide compound concurrently. All the patients who had surgical drainage had received sulfonamide drugs before admission to the hospital, and one received sulfadiazine after operation.

"It is of particular interest to note the small amount of penicillin given several of the first patients treated. That small doses may be adequate for infants, is illustrated in one case in which the patient received penicillin alone in amounts of 2,500 units intramuscularly every three hours and as two intrapleural injections of 10,000 units each. This patient recovered without surgical drainage. The last four patients received 15,000 or 20,000 units of penicillin intramuscularly every three hours and frequent intrapleural injections of 30,000 to 50,000 units in 10 cc. of isotonic solution of sodium chloride. All patients who responded to medical treatment did so within one week after penicillin was started. The number of thoracenteses required varied greatly with the individual patient. One patient received no intrapleural injections of penicillin and responded to intramuscular injections. The majority of the patients received at least four intrathoracic instillations of penicillin and one patient as many as eight. In no patient was the pleural cavity irrigated with the solution of sodium chloride. The dose of penicillin was smaller than that advocated by most investigators, who recommend daily thoracenteses at first, with instillation of as much as 200,000 units of penicillin into the pleural cavity.

"The three patients who did not respond without surgical drainage, had complications which may have prevented successful penicillin therapy. Two of these patients had pneumothorax with bronchial fistula. The lung could not be re-expanded by aspiration. One of these patients had large bands and clots of fibrin, which could not be removed through a needle. The third patient also had fibrin clots, and the purulent fluid was too thick to aspirate. If irrigation with saline solution had been done, this patient would perhaps have responded. No tests of sensitivity to penicillin were made, and several of the organisms causing the infections could have been resistant to penicillin.

"The number of days in the hospital was nearly twice as great for the surgically treated patients as it was for those treated nonsurgically, but for the former patients a medical regimen was first tried.

"These results for children are similar to those reported for adults, about one half to two thirds of whom can be cured without operation if the causative organism is susceptible to penicillin. In this small series the patients responded rapidly and no chronic empyema occurred."

COMMENT: This is a most interesting article and one that deserves the consideration of not only pediatricians but all physicians who practice on children. The article speaks for itself and it is hardly necessary to add any comment relative to the main points brought out in it.

PATHOLOGY

ENDOMETRIOSIS AS A CAUSE OF INTESTNAL OBSTRUCTION — Paul McGuff, M. D. From Proceedings of the Staff Meeting of the Mayo Clinic Vol. 23 P. 215-221 No. 9 April 28,1948.

Endometriosis as a cause of intestinal obstruction occurs rather infrequently. Pelvic endometriosis, however, without obstruction occurs in approximately 10 to 20 per cent of women between the ages of thirty and the menopause, and the majority of the women are sterile. Endometriosis causing intestinal obstruction occurs in about one per cent of those having pelvic endometriosis. Counseller has classified the three theories of pathogenesis of endometriosis as 1) embryonic rests,)2 metaplasia, and 3) migratory. The single theory which best seems to explain all types of endometriosis is the third or migratory theory in which there may be metastases by way of the venous and lymphatic channels of the pelvis and abdomen.

McGuff has picked sixteen cases of ileal obstruction due to endometriosis though on closer reading only three of these cases appeared to involve the ileum. Ten involved the sigmoid colon and three involved the recto-sigmoid colon.

According to McGuff, the preoperative diagnosis rests on the findings of periodicity of symptoms associated with the menstrual cycle and the onset of menstruation superimposed upon symptoms of intestinal obstruction. There is usually abdominal pain, distension, obstipation, vomiting and abdominal tenderness. Occasionally the finding of a mass in the lower abdomen is noted. There may be blood in the stools though this is somewhat unusual. The obstruction may be partial or complete. In the sixteen cases reviewed by McGuff, pelvic operation had occurred in half, fibroid tumors of the uterus were encountered in half the cases and almost half of the patients complained of acquired dysmenorrhea.

Sigmoidoscopy may reveal the tumor but biopsy seems to be of little value as a diagnostic aid unless the endometriosis has occurred in the recto-vaginal septum with invasion of the vaginal mucosa. Biopsy otherwise usually reveals only inflammatory tissue. Roentgenography reveals a long, inconsistent, filling defect with sharp regular borders and this as well as sigmoidoscopy, which shows an extrarectal mass with intact mucosa, are the two most valuable adjuncts to diagnosis.

The treatment is surgical. In a younger woman there should be radical attack on the intestinal pathology and conservative attack on the ovaries while in an older woman the reverse is true, that is, radical panhysterectomy with or without enterostomy. All specimens should be submitted for immediate frozen section as this lesion grossly may be easily mistaken for carcinoma. The prognosis is excellent and the surgical mortality rate very low: In McGuff's series the mortality was zero. In ileal lesions the obstruction is usually caused by kinking and scar tissue formation, while in the sigmoid and recto-sigmoid colons it is usually due to impingement of the endometrial tissue into the lumen of the intestine. Endometriosis of the bowel grows or extends from without inwards, from serosa to mucosa while carcinoma extends from within outward or from mucosa to serosa. Dockerty in a discussion of this paper by Dr. McGuff likens the lesions of endometriosis to tiny uteri with functioning glands and stroma and like ordinary endometrium this ectopic tissue responds to the action of ovarian hormones by proliferating, differentiating and menstruating in a cyclic fashion. The endometrium of this tiny uterus operates under two disadvantages, however. It lacks drainage and it is growing often in a foreign and unsuitable soil. The effect of this is to cause a fibroplastic spread and scarring. After the menopause, either natural or surgical, there is dramatic relief from the pain of endometriosis. The surgeon takes advantage of this effect and in selected cases can produce a surgical menopause with most dramatic relief from intestinal obstruction due to endometriosis.

MYOCARDIUM AFTER SULFONAMIDE THERAPY, Robert M. Fawcett, M. D., Archives of Pathology, Vol. 45: 25, 1948.

French and Weller (Amer. J. Path., 18: 109, 1942) have reported that interstitial myocarditis occurred in 55.5 per cent of 227 cases in which patients had taken one of the sulfonamides before death and in which other known causes of myocarditis had been eliminated. The myocardial lesions which they reported consisted of collections of large mononuclear cells of the clasatocytic type, and numerous cells with granular eosinophilic cytoplasm. They found no constant change in the interstitial supportive tissues or in the muscle fibers themselves.

Because of conflicting reports by other workers concerning the incidence of interstitial myocarditis in humans following sulfonamide therapy, and in experimental studies on animals; and because indications for the administration of sulfonamides are still many in spite of the newer antibiotics; Fawcett has attempted to clarify the situation.

The number of cases of interstitial myocarditis indexed as such in the necropsy files of the Mayo Clinic for two five-year periods were compared. In the period of 1930-1935 (before the sulfonamide era) six cases were observed and recorded, while in the period of 1937-1942 (during which the sulfonamides were used freely) again only six cases were observed and recorded.

A preliminary study showed in the myocardium neither gross evidence of change due to the sulfonamide drugs, nor microscopic evidence of any change in the muscle fibres or of the interstitial supportive tissue for which these drugs could be blamed.

The principle study was a quantitative analysis of the types and of the total collections of interstitial cells in 100 cases in which sulfonamide drugs had been given, and in 100 control cases (from the presulfonamide era). Clinical data were obtained and analyzed in each case in the series.

Fawcett reports that no one type of cell predominated in the sulfonamide group, nor were large collections of either eosinophils or mononuclear cells with eosinophilic granules observed; and no differences were found in the numbers or the types of cells between the auricular and ventricular myocardium. No significant correlation was found between the type of sulfonamide given, the total dose, the duration of treatment, the interval between the end of treatment and death, the history of sulfonamide reactions, and the histologic appearance of the myocardium.

State Board of Health

Felix J. Underwood, M. D.

VITAL STATISTICS

During 1947, 20,007 deaths of residents of Mississippi were registered---an increase of 3.6 per cent over 1946. The crude death rate was 8.66 per 1,000 population as compared with 8.4 in 1946. The number of live births (66,291) was the largest ever recorded in a single year and exceeded the 1946 registration by almost 5,000. The crude birth rate was 28.6 per 1,000 population while the rate in 1946 was 26.8. The birth rate exceeded the death rate by 20.0 per 1,000.

The number of marriages decreased from 64,204 in 1946 to 53,584 in 1947. More than a third of the brides gave an out-of-state residence and in each of three counties (Alcorn, DeSoto, and George) more than a thousand licenses were issued to out-of-state brides. The number of divorces also decreased in 1947 when 7,004 were granted.

It may be of interest to note that there were only seven typhoid fever deaths in the State during 1947; only 14 diphtheria deaths, and 23 deaths from malaria. Heart disease deaths increased during the year; cancer deaths increased in 1947 in contrast to a slight decrease in 1946 under the previous year. Heart disease deaths totaled 4,174 in 1947; cancer deaths were 1,799.

The Public Health Statistical Service reports that it has made numerous special tabulations and some analyses of 1947 vital statistics data. Included were premature births by county by race, illegitimate births by county by race, full term births by race by age of mother, marriages by age of bride and groom and alphabetic lists of deaths from certain causes.

A file of reported cases of cancer has been set up and is being maintained. Periodically this file is checked against cancer deaths to remove deceased persons and to add cases to the morbidity reports. It will report a convenient starting place when plans are completed for a cancer register.

The tuberculosis registers for 28 counties have been transferred to punch cards and status reports have been prepared for these counties.

Monthly and semi-annual reports have been made of the venereal disease case contact investigations. A special analysis was prepared of the age-sex-race distribution of cases of primary and secondary syphilis and arrangements are being made to analyze a special Quitman County project upon its completion.

The quarterly EMIC cost-per-patient-per-service reports were prepared. In cooperation with the Division of Maternal and Child Health, plans have been made to complete the analysis of the entire EMIC program in Mississippi. Records for 1944 have previously been analyzed and the new analysis will include cases completed in 1943, 1945, 1946 and 1947. The pilot study made of the 1944 cases has been used as a basis in this and other states to formulate plans for the final analysis.

The semi-annual report of physicians licensed in Mississippi was prepared as of January 1, 1948. At that time there were 1,393 physicians—a net increase of two within a six-months' period. The distribution of these physicians by race, by sex, by age groups and by county was shown in the report.

Several other special studies are in progress by the Public Health Statistical Service, among them the preparation of life tables for Mississippi to determine what, if any, change has occurred in the life expectancy from 1920 through 1940; the analysis of morbidity to determine what physicians are cooperating; the seasonal variations in morbidity; the tuberculosis problem as shown by morbidity and mortality records.

An analysis of a nurses roll call was made upon the request of the Mississippi Commission on Hospital Care. The study showed the number of nurses by race, by training, by employment status and type, by location, and by other important factors. The Public Health Statistical Service assisted this agency in determining the deficit in nurses and in planning for further needs.

All data for the 1947 Vital Statistics Bulletin have been tabulated and will soon be released in two volumes. Volume 1 will contain a narrative analysis and tables showing births, stillbirths, deaths, marriages and divorces for the state, the 82 counties and, in some instances, for the cities of 10,000 or more. The second volume will contain detailed information for each county and will be sent to only those persons who have need for such data. Physicians who have need for any of the information compiled by this division may feel free to make requests.

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NUTRITION SEKVICES

Real progress has been recorded in the development of the nutrition services of the State Board of Health. County health departments, schools, maternity conferences, hospitals, industries, home demonstration clubs and others figured prominently in these services. A 6-hour nutrition refresher course for county health department personnel was given in Harrison, Washington, Leflore, Pike, Lauderdale and Forrest counties.

Maternity conferences were attended in approximately ten counties. At the request of the Maternal and Child Health Division's obstetrical consultant, a study is being made of the incidence of clay and starch eating during pregnancy.

A one-day dietary survey was made by the health educator in Harrison County which included eight hundred elementary school children. This was done at the request of the pediatric consultant and with the assistance of a nutritionist. It was found that the best meal which these children received each day was that offered by the school lunch program. Demonstrations on teaching nutrition were given in a Bolivar County school and a talk on "Nutrition in Schools" was given to a local civic club in Jackson County. At the request of the health educator in Warren County, a program-planning conference attended by county elementary teachers was held and consultation service was given in preparing a handbook for use in the elementary program.

Several industrial plants were visited, accompanied by the Industrial Hygiene Nurse, and nutrition services were offered. While on a visit to the South Mississippi Charity Hospital, arrangements were made to begin a nutrition class for the student nurses.

A report of the dietary habits of colored expectant mothers in north Mississippi was presented to the Grenada Coordinating Council. The five home demonstration clubs in Alcorn County were given a discussion on the general nutrition needs in that county. A request from a civic group in Greenville for adequate low-cost menus for needy families was met.

"Nutrition Notes," and "Your Patient's Food," periodic publications of this division, included the following subjects:

What to Serve on Meatless Tuesday
Scoring the Maternal Diet
The Low Cost Protein

A new card, "What to Eat Before the Baby Comes," and "What to Eat After the Baby Comes" was almost completely exhausted within two weeks after its first printing.

Another leaflet, "When Your Doctor Says 'Eat More Protein and Use Less Salt'" is in the process of preparation. Pamphlets prepared on diet in tuberculosis and the diet in school-age children have been well received and found a useful place in the county health department's literature supply.

Beginning July 1, the four nutrition students now on scholarships will return and the state will again be districted. One will be located in Clarksdale, the second in Grenada, the third in Tupelo, the fourth in Meridian and a fifth in Hattiesburg serving the southern part of the state, all under the direction of Miss Alice Glenn Keaton, Nutrition Consultant. Each nutritionist will have a district of from seventeen to twenty-five counties in which to offer consultation services as part of the public health services in Mississippi. The service will be a generalized one to be extended to all community agencies alike.

Some of the outstanding public health problems which still remain unsolved in Mississippi, are based on nutritional deficiencies. It is felt that this expanded nutrition program can contribute greatly to better health in the school child, lowering of the premature infant death rate, decreasing the number of stillbirths, better work production in factory and farms, as well as better community health in general. The program will be one of the best of its type in the South.

FULL-TIME COUNTY HEALTH DEVELOPMENT

Appropriations are now available to promote full-time health activities in all the counties in the state with the exception of Jefferson, Webster, Choctaw, Montgomery and Walthall. The Walthall and Webster County Boards of Supervisors have recently discussed their interest in making an appropriation for a health department in September. The goal of a full-time health department for all of the 82 counties is appreciably near and work goes forward continuously to staff them adequately and to help them develop well-rounded health programs.

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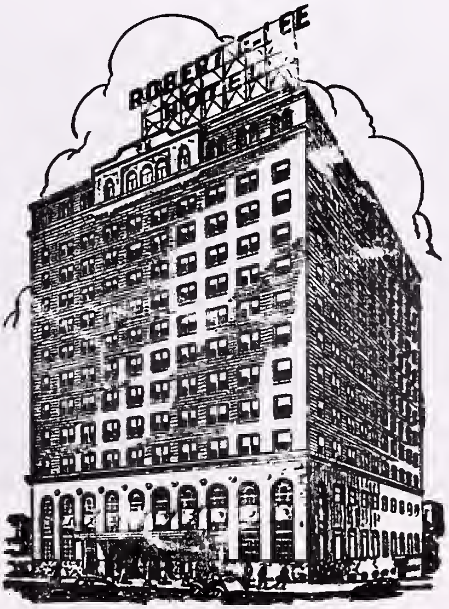

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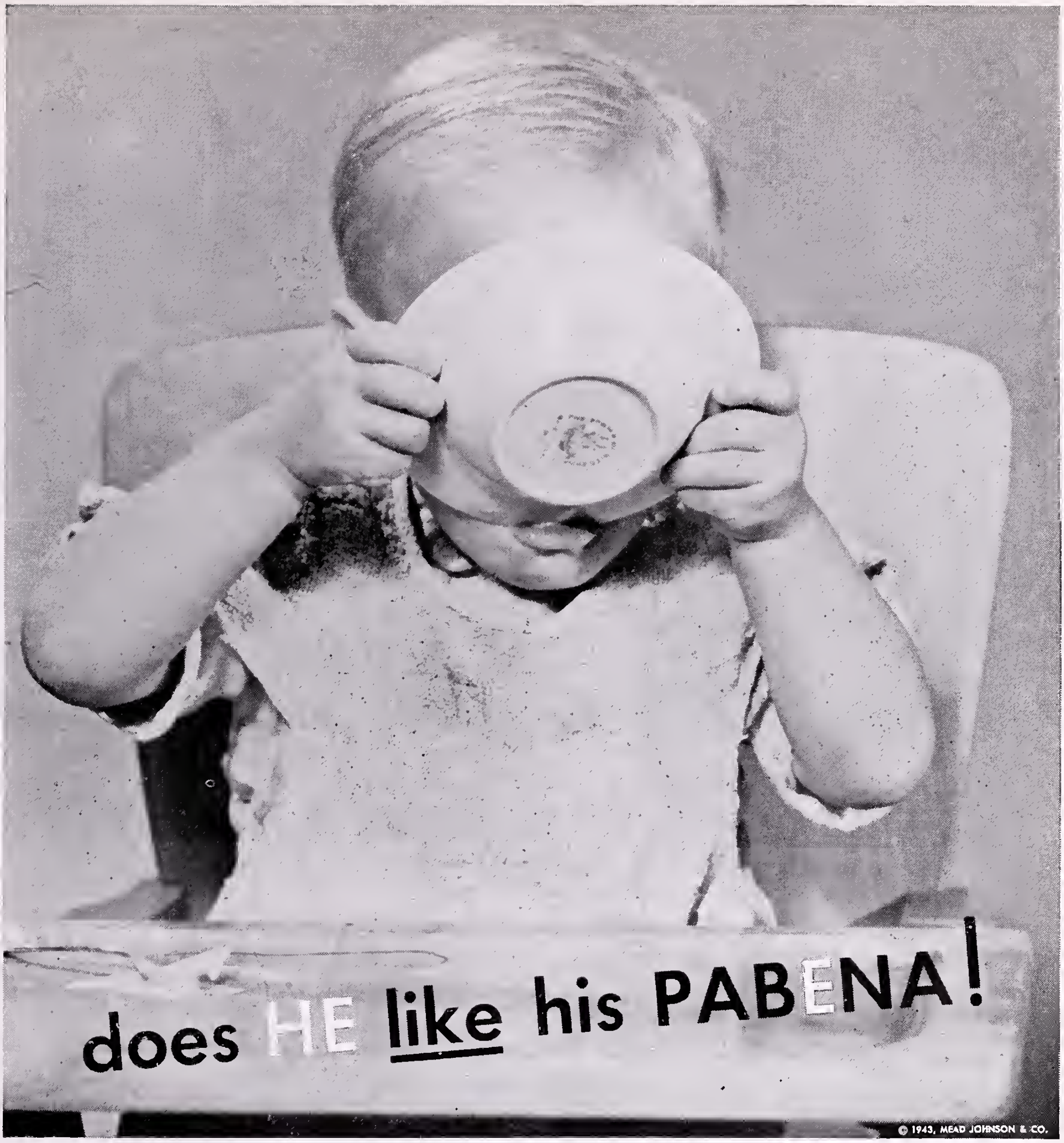
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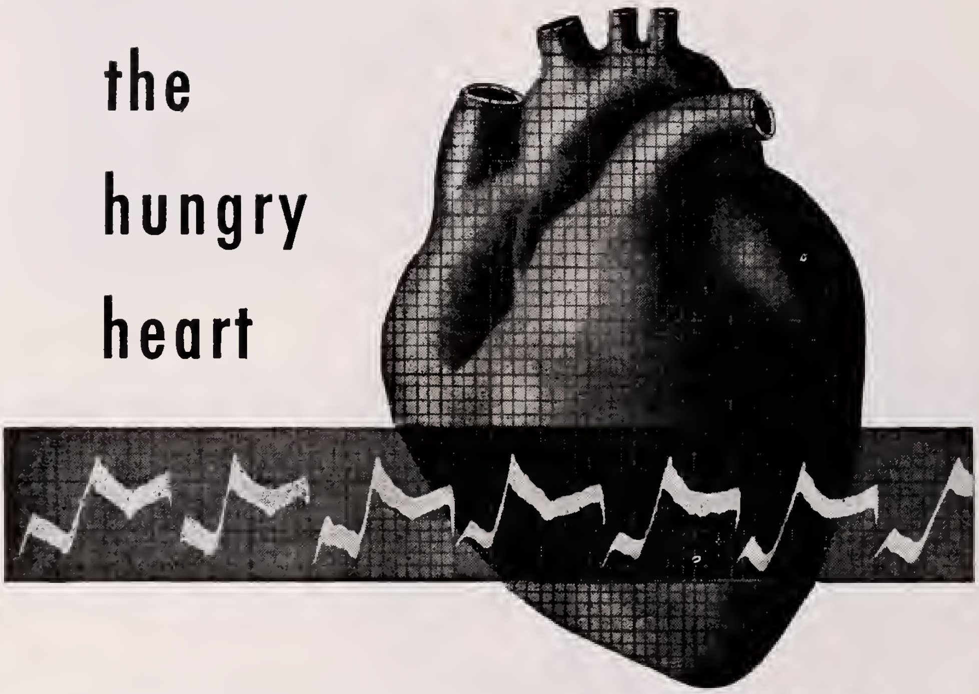

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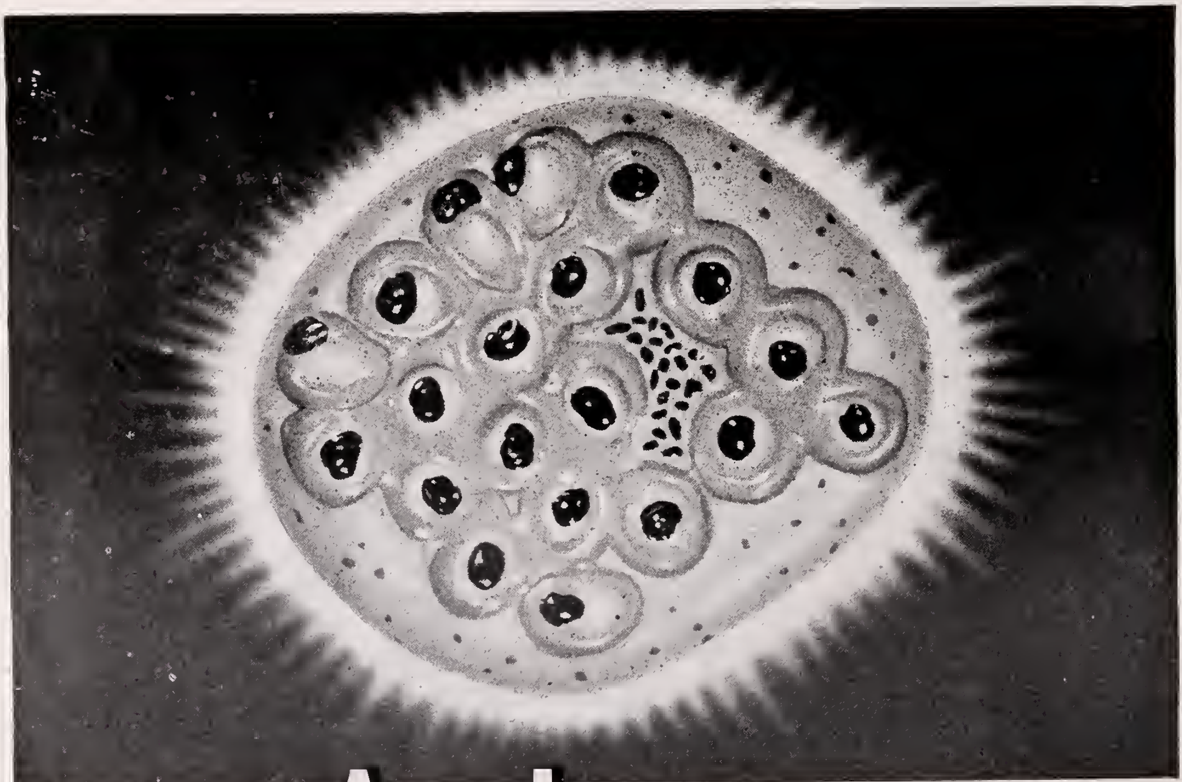

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1. Friedlaender, A. S., Friedlaender, S., Amer. J. Med. Sc., in press. 2. Peirce, J. D., Mothersill, M. H. (1947), Treatment of Allergic Symptoms with a New Antihistamine Drug, J. Ind. Sta. Med. Assn., 40:739, Aug. 3. Brunsting, L. A. (1948), Recent Advances in Dermatology and Syphilology, Canadian Med. Assn. J., 58:133, Feb.

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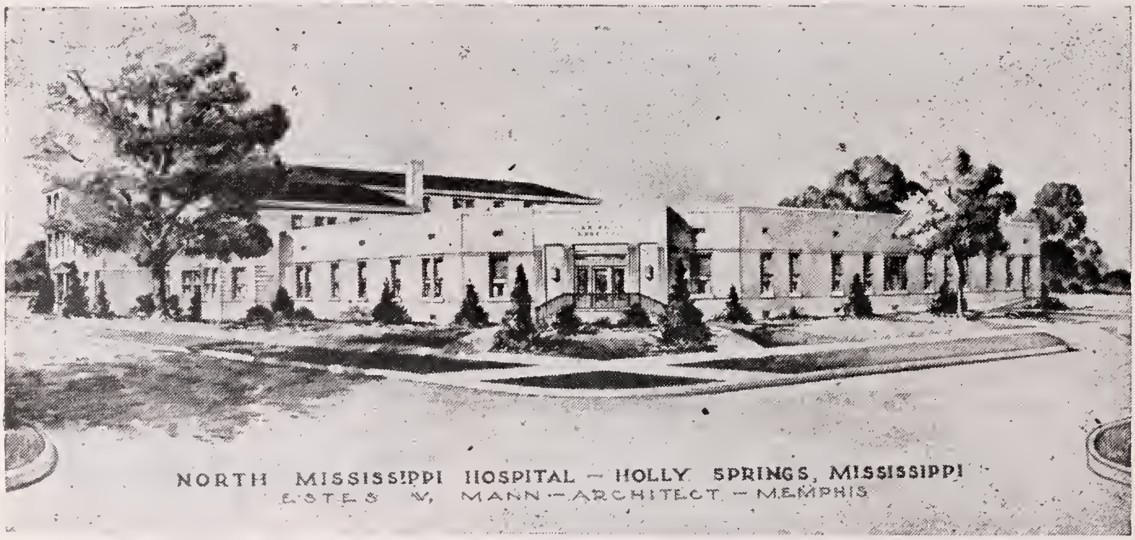
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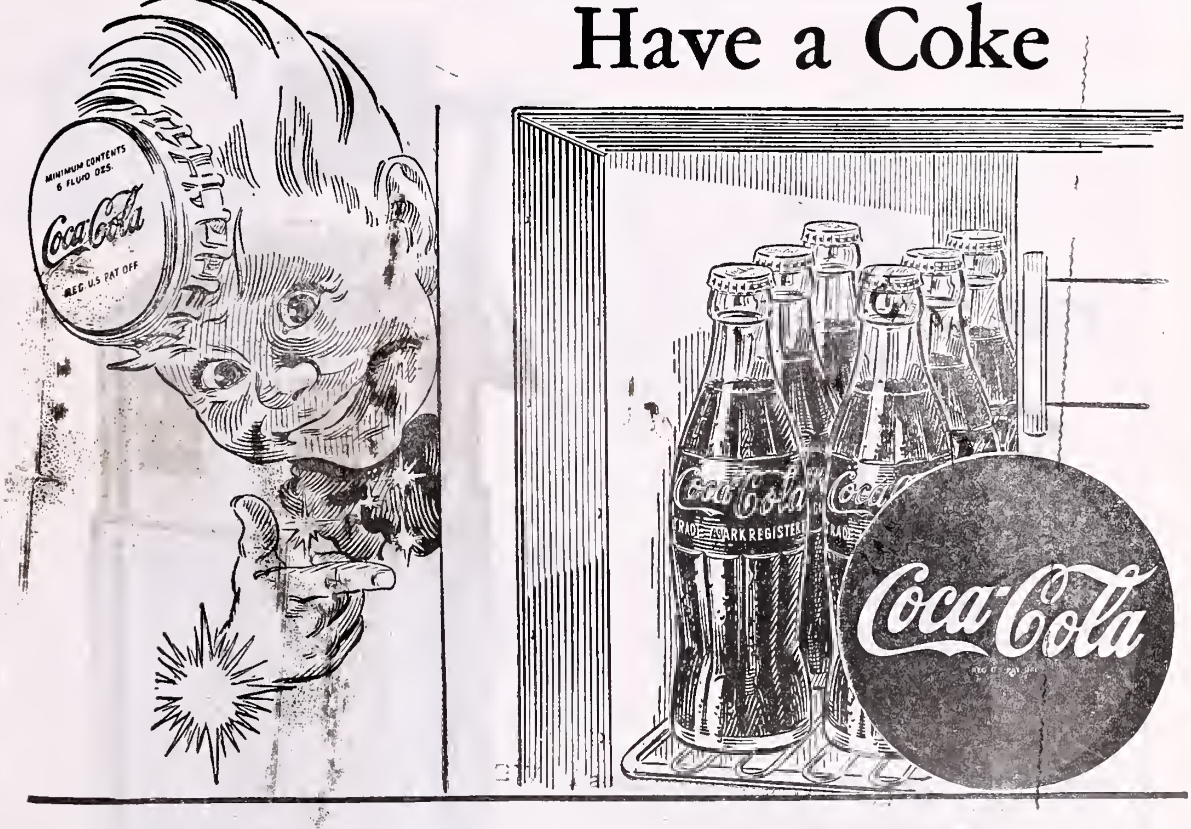
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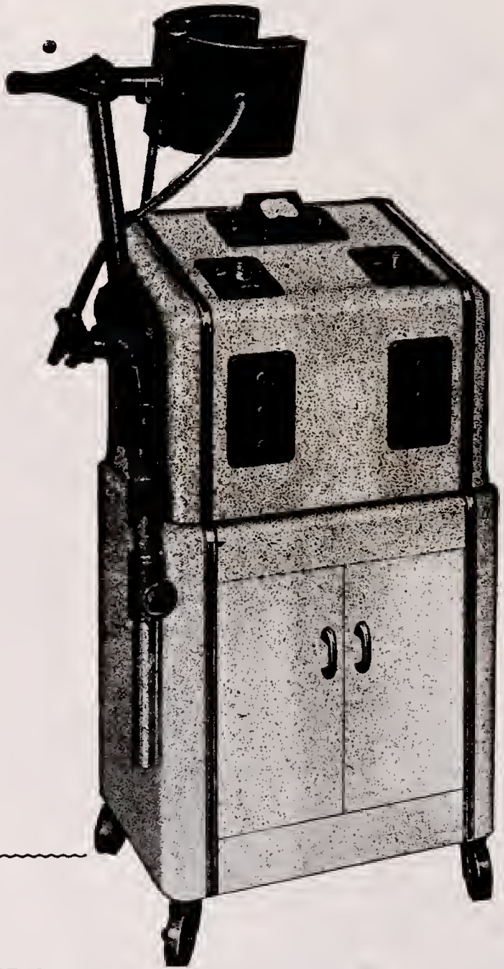

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Uterine Cancer — Diagnosis and Treatment*

Charles Augustus Behney, A. B., M. D.

Philadelphia, Pa.

During the thirty-five years which have elapsed since radium was first utilized in the treatment of uterine cancer, there has accumulated a voluminous collection of data regarding the comparative values of different techniques used in the application of this rare element, of radium therapy combined with roentgen therapy, and of each or both compared to radical surgery of various types, and recently a combination of irradiation therapy and surgery. In this disease, as in others, for which no completely satisfactory remedy has yet been presented, there is widespread divergence of opinion as to the most advantageous manner in which the materials and knowledge now available may be employed for the treatment of this disease.

Carcinoma of the uterus is the most common malignant lesion occurring below the waist in women, and it is the cause of death of approximately 17,000 women annually. Because of its relatively accessible location and characteristic signs, if sought for, its detection is seldom difficult. At its commonest site, the cervix, it can be inspected, palpated, and samples for microscopic study can be secured with ease. In the fundus it can be detected without hazard to the patient, or too demanding skill on the part of the investigating doctor. That not more than 25 per cent of these growths are discovered before they have become extensively invasive is a challenge to the medical profession and our apology for again presenting this familiar topic. With presently available materials and techniques, substantial improvement in salvaging victims of this disease can be realized through the enlightened, cooperative efforts of every doctor who treats women.

Comparatively recent researches would indicate that malignant cell growth may result from the combination of an inherited tendency, some irritating influence, and growth stimulating substances such as estrogens. Hodgson, Dockerty and Mussey,[2] Hertig and others have noted a high percentage of uterine cancer in association with estrogen-producing ovarian tumors. We are all familiar with the endometrial hyperplasia produced by prolonged administration of estrogens to postmenopausal women. Though it has never been proved that particular uterine cancers developed directly from the administration of estrogens, the unfortunate tendency in many quarters to experiment with hormones, in cases of irregular or postmenopausal bleeding, has been an important factor leading to delay in arriving at the diagnosis of cancer of the genital tract.

Schiller[3] called attention to the pre-invasive stage of carcinoma of the cervix. By following up patients with such lesions, who refused treatment, he observed the eventual development of typical, invasive, ulcerating neoplasms, after periods of quiescence of as long as fifteen years. These findings have been confirmed by TeLinde[8] and others. At this stage of the disease simple amputation of the cervix has sufficed to protect the patient from later recurrence of carcinoma.

Definitions of the Four Stages of Cancer of the Cervix Uteri

The League of Nations Health Organization[3] is endeavoring to promote a universal adoption of their classification of carcinoma of the cervix. While more complicated than the Schmitz classification it is clear and its use is desirable in all clinics so that a uniformity of records throughout the medical world may be achieved. The definitions of the four stages of cancer of the cervix approved in 1937 are as follows: **Stage 1**—The carcinoma is strictly confined to the cervix. **Stage 2**—The carcinoma infiltrates the parametrium on one or both sides, but has not invaded the pelvic wall. (Stage 2, parametrium.)

The carcinoma infiltrates the vagina, but does not involve its lower third. (Stage 2, vagina.)

Endocervical carcinoma which has spread to

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* Read before the fifty-ninth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., February 11-14, 1947.

477266

the corpus. (Stage 2, corpus.) **Stage 3**— The carcinomatous infiltration of the parametrium has invaded the pelvic wall on one or both sides. On rectal examination no cancer-free space is found between the tumor and the pelvic wall. (Stage 3, parametrium.)

The carcinoma involves the lower one-third of the vagina. (Stage 3, vagina.)

Isolated carcinomatous metastases are palpable on the pelvic wall (irrespective of the extent of the primary cervical growth). (Stage 3 isolated pelvic metastases).

Stage 4 — The carcinoma involves the bladder as determined by cystoscopic examination or by the presence of a vesicovaginal fistula. (Stage 4, bladder.)

The carcinoma involves the rectum. (Stage 4, rectum.)

The carcinoma has spread outside the true pelvis (below the vaginal inlet, above the pelvic brim, distant metastases). (Stage 4, distant spread.)

GENERAL RULES TO BE OBSERVED

When allocating a case to a stage, nothing but facts revealed by examination should be taken into account.

The stage of each case should be decided at examination prior to treatment, and this classification should remain. The classification may be postponed quite exceptionally and the reasons stated.

When it is doubtful to which stage a given case is to be allocated, the earlier stage should be chosen.

The fact that a single case presents two or more of the conditions which characterize a particular stage does not affect the stage.

In our clinic, we grade all cases in accordance with both the Schmitz and League of Nations stipulations, in order to maintain our records in uniformity, as well as to be able to report our data to the League of Nations Health Organization, for evaluation with statistics throughout the world.

Numerous efforts have been made to correlate the histologic pictures produced by malignant tumors with their clinical malignant tendencies. In some organs, histologic grading is easier, while in others, such as the cervix, it is more difficult, and is of very little value in the prognosis for individual cases. In large groups, however, the anaplastic tumors appear to be more radio-sensitive than the more highly differentiated types. In our experience, a more satisfactory method of prognosticating in individual cases is to secure a biopsy before irradiation, and a second biopsy after irradiation. By comparing the histologic pictures of these two specimens one can usually get a very clear idea of the effects which can be expected from the irradiation treatment. In radio-sensitive tumors, the majority of tumor cells will exhibit destruction of the cell outlines, cloudy swelling, liquefaction necrosis and loss of staining properties, several weeks after irradiation has been given. Similar observations can be made from smears taken before and after irradiation.

The symptoms of uterine cancer have long been well known. In spite of this, it is to be deplored that so often the familiar signs of irregular bleeding and abnormal discharge are disregarded by the physician first consulted. Consequently, days and months of precious time are lost, during which the tumor cells multiply rapidly, surrounding structures are invaded, and the probability of ultimate arrest is progressively reduced. Doctors, as well as patients, too frequently regard these early symptoms as manifestations of the approaching menopause and often dismiss them without as much as an ordinary pelvic examination. Additional causes of patient delay are the belief that cancer is incurable, fear of operation, and false modesty. Catherine Macfarlane[4] has demonstrated that semi-annual pelvic examinations will bring to light early lesions of the uterus before symptoms of carcinoma have appeared. That physicians themselves are responsible for delay in the diagnosis and treatment of pelvic cancer has been demonstrated by the investigations of "The Philadelphia Committee for the Study of the Delay Period in the Diagnosis of Pelvic Cancer"[6]. Physicians alone were found responsible for delay in diagnosis and/or treatment in 24.5 per cent of cases in which delay occurred and in 12.0 per cent the delay was charged against both the physician and the patient. A total of 36 per cent delay in which the doctor was involved.

Dr. Macfarlane examined the breasts and pelvic organs twice annually for 671 presumably well, white women. An additional 121 presented themselves for examination at irregular intervals. As the result of 10,325 such examinations, symptomless malignant lesions were discovered in 2. 5 per cent of cases. In a similar study of 1,800 women, over a period of seven years, 7.6 per cent were found to have cancer. Five Cancer Detection Clinics established in Philadelphia by the Donner Foundation[5], as the result of 5,279 examinations of women over a nine-month period, report four cases of carcinoma of the cervix, three of the corpus and five of the breast. More than 50 per cent of the remainder of examinees showed other non-malignant diseases requiring medical or surgical care.

A proper examination consists of bi-manual vagino-rectal palpation and inspection of the cervix through a well-lighted speculum. Abnormal areas on the cervix should always be excised and examined microscopically. Curettings should be obtained from the cervical canal and from the endometrial cavity for similar investigation. Microscopy is the only means of confirming or disproving the presence of cancer. The gross appearance of the lesion can never be relied upon for an accurate diagnosis.

The development of the colposcope, by H. Hinselman of Hamburg, and the "Iodine Test," introduced by Schiller, stimulated interest in diseases of the cervix and added materially to our knowledge of carcinoma in this organ. Schiller[7] has demonstrated that early malignant lesions of the cervix may remain clinically imperceptible for as long as fifteen or more years. During much of this time, the disease appears to be non-invasive, and TeLinde[8] has found numerous such lesions which have been designated "carcinoma in situ." Adequate treatment at this stage of the disease has resulted in five-year salvage of more than 90 per cent of cases. Biopsy of the cervix can be performed without risk or great inconvenience to the patient. It does not require great surgical skill and in many instances can be performed in the office or clinic without anesthesia. For office biopsy, one of the punches designed for this purpose is most satisfactory. Cauterization of the biopsy site and insertion of a tampon will prevent troublesome hemorrhage.

Vaginal smears collected, and stained by the technique described by Papanicolau and Traut[9] is a valuable adjunct in the early detection of uterine cancer. It is useful as a screening process for patients free from symptoms or signs of the disease, but must never be regarded as a substitute for biopsy or curettage. If cancer cells are observed by a competent cytologist, the diagnosis should be confirmed by biopsy or curettage and anti-cancer treatment instituted. When signs or symptoms of cancer are present, biopsy and curettage should be performed despite the failure to detect malignant cells in the smears.

Treatment

Before the introduction of radium therapy, surgery was the only means of effectively treating cancer of the cervix. In spite of the improved technique of the radical hysterectomy, developed by John G. Clark and Emil Ries, and later popularized by Wertheim, the results of surgical treatment was discouraging. Only women in good general condition could be expected to survive such a shocking, time-consuming procedure. The operation was technically impossible for lesions extending to the parametria. It was, therefore, limited in application to not more than 15 per cent of the victims of this disease. In the hands of gynecologic surgeons most skilled in this procedure, the immediate mortality ranged from 13.8 per cent to 17.2 per cent. Many who survived these operations were left with distressing results from injuries to the bladder, ureters or the intestinal tract. Recurrences were frequent. The five-year salvage varied, averaging from among this select group of early cases only about 25 per cent. It is, therefore, not surprising that, after the efficacy of radium treatment for cancer of the cervix had been demonstrated, the surgical treatment was abandoned almost universally and radiologic treatment adopted.

Radiologic treatment, though most effectual in the early stages of carcinoma of the cervix, is beneficial in all stages of the disease. Competently administered, it has excellent palliative effects in cases where recovery cannot be expected. The primary mortality is only that occurring from the anaesthetic agent employed, and in capable hands, there are few complications. The salvage rate is 25 per cent or more when all stages of the disease are considered.

After the diagnosis of carcinoma has been confirmed by microscopic examination of a biopsy specimen, the treatment should be individually planned for each patient, based on the following conditions, in the order of their importance: 1) the general condition of the patient, 2) the stage of the disease, 3) the size of the uterus. For example, exsanguinated women may require blood transfusions, correction of deficiencies of serum proteins, blood chlorides or water before therapy can be safely instituted. Pregnancy or active inflammatory lesions of the pelvis may require modifications of the routine. Each patient should have a proctoscopic and cystoscopic examination, and the condition of the upper urinary tract should be ascertained.

The plan of treatment is dependent on the degree of involvement. All patients are given preliminary high voltage x-ray therapy. Radium irradiations, in the maximum dosage, consistent with the safety of neighboring important structures, are used for lesions in Stages I, II, and III, (Schmitz classification) with the intention of permanently arresting the disease. In Stage IV lesions, the probability of cure is remote and radium irradiations, because of their local effects, often prove harmful. In this stage of the disease only high voltage x-ray therapy is employed, with temporary palliation, arrest of hemorrhage, and relief of pain, the objectives.

X-ray Therapy—For treating pelvic tumors, roentgen rays of short wave lengths are required. These are delivered by machines operating on a voltage of 150 kilovolts or more. Greater voltages enhance the effectiveness of the rays to an, as yet, undetermined point, and as high as two million volts are used in some clinics. However, the use of these supervoltages has been followed by undesirable effects on neighboring viscera, and until the optimum voltage has been determined the lower high voltages, with which we are more familiar, are recommended.

In our clinic, the antero-posterior and transverse pelvic diameters are determined for each patient. A diagram is then made depicting the shape and size of the abdomen at the level of the iliac crests. From this the distance from the skin surface to the center of the pelvic tumor can be measured, and an estimate made of the skin irradiation required, at any point on the surface, to deliver the desired dosage to the tumor. Obviously, in order to deliver a uniform tumor dose, the larger women, or those with thicker abdominal walls, will require a greater skin dosage than small or thin women.

Our technique, ordinarily, involves two anterior and two posterior ports with each field 15 to 20 cm. in diameter. (In large, stout women it is necessary to use, in addition, two lateral ports. The center of the field of radiation is angled at about 30 degrees and directed toward the center of the body. A total of 2,200 r, measured in air, or 3000 tissue roentgens are delivered to the tumor. Two hundred kilovolts, S. T. D., 59 cm., copper plus 1 mm.aluminum are used.

Lesions in Stages I, II, or III (Schmitz classification) are treated with radium (or radon) four weeks after the preliminary x-ray therapy has been completed. The radium is applied to the entire cervico-uterine canal and to the portio vaginalis. There is no such thing as a cancer dose, although the converse is true, that there definitely is radium dosage, inadequate for the destruction of cancer. Every malignant lesion should be given the maximum dosage which is tolerated by the normal structures within the field of irradiation.

Irradiation effects occur in normal structures as well as in the malignant tissues. However, the latter, depending on their radiosensitivity, are affected to a greater extent. The first effects of irradiation occur during the first week following its application. The tissues are reddened, swollen, and have the usual appearance of hyperemia. Following this, the irradiated area becomes covered with blackish-green slough, surrounded by a zone of inflammation and swelling. At this time the offensive watery discharge begins and continues for from one to two months. Subsequently, the slough separates and granulation tissue replaces it. As healing continues, the cervix becomes contracted and more or less atrophied in appearance. If a considerable area of the cervix has been involved, there may be a contraction of the upper portion of the vagina.

Many techniques have been employed for the application of radium for carcinoma of the uterus. The difference in results, provided adequate dosage, proper filtration and skillful application are practiced, is not great.

Radium irradiation may be performed, if desirable, under local anaesthesia, but short general anaesthesia, such as nitrous oxide and oxygen, or intravenous sodium pentothal, enables a more satisfactory examination and a more precise application. After the routine preparation of the vulvar region, as is done for any surgery of the lower birth canal, the cervix is exposed with a speculum and grasped with a double tenaculum. The cervico-uterine canal is explored with a sterile sound, and its length is determined. The cervix is then dilated until it will easily admit the radium in its rubber- covered applicator, the walls of which serve as a filter equivalent to 1 mm. of platinum. The length of the applicator and the intracervico-uterine dosage, ranging from 2400 to 6000 milligram hours, vary with the depth of the uterine canal.

For the vaginal application, we employ radium in 0.5 millimeters of silver and 4.0 millimeters of lead, at a distance of 1 centimeter. Such an application is made transversely across the vaginal portion of the cervix. Similar tampons are placed firmly into each vaginal fornix, so that a cross-firing effect is secured from the three vaginal tampons, and from the radium within the cervical canal. The dosage for the vaginal irradiation is 1200 milligram hours for each position. The radium is held in place by gauze packing, which also displaces the bladder and rectum, and protects them from undesirable effects of the irradiation. While the radium is being applied, the patient must be confined to bed continuously and the bladder evacuated by catheterization. Some operators employ a self-retaining, soft-rubber catheter, and this is undoubtedly the best plan if competent nursing care is not available. An enema is given on the day on which the radium is removed and the patient is permitted to be out of bed. Nausea, vomiting or diarrhea may occur during irradiation by x-rays or radium. These symptoms usually subside after the irradiation is discontinued, but may require relief before the treatment is completed. We have found pyridoxine hydrochloride, nicotinamide and phenobarbital of value in such cases. Most patients are ready for hospital discharge two or three days after the radium has been removed.

It must be remembered that the maximum benefit from irradiation is not attained until several weeks after the application has been completed. Indeed, the immediate effects, which may impress the uniformed, are that the treatment has aggravated the condition. For the protection of the radiologist, and in order to avoid bringing discredit on radiologic therapy, it is advisable to warn patients to expect foul leukorrhea and continued bleeding for several weeks. In our clinic, radium is administered six weeks after preliminary high-voltage x-ray therapy. A second series of high-voltage x-ray therapy is given six weeks after the application of radium has been made. Two principles of physics are taken advantage of in this method of treatment of carcinoma, i. e., 1) heavy filtration; and, 2) irradiation at distance. By means of these factors, the alpha, beta and soft gamma rays are absorbed, only the more deeply penetrating hard gamma rays being utilized. This results in a more uniform application of the rays to the deep and superficial portions of the tumor so that a relatively greater dose can be delivered to the depths of the neoplasm without over-exposing the superficial tissues. By irradiating at a distance (usually 1 cm.), the superficial rays are dispersed before they reach the tissues. By applying radiations continuously over a longer period the cells are exposed to irradiations during every phase of mitosis. This is advantageous, since tissue cells, particularly cells of malignant tissue, appear to be more radio-sensitive in certain stages of mitosis.

Treatment — Stage IV

As radiologic gynecologists became more familiar with the effects of radium irradiations on carcinoma of the cervix, they often observed devastating effects when used for Stage IV lesions. These were due to the rapid destruction of large carcinomatous masses, resulting in perforations into the peritoneal cavity, peritonitis, fatal septicemias, hemorrhage, and fistulas. Such unhappy experiences led to the abandonment of radium irradiation for lesions in Stage IV. In 1932, a series of Stage IV carcinomas of the cervix, treated with only high voltage x-ray therapy, was reported[10]. In these the average life span was four times as great as that of patients with lesions of the same stage who had been untreated, and twice as long as that of a third series in Stage IV who had been treated with only radium. External high-voltage x-ray therapy is now the routine treatment for Stage IV lesions in most clinics. The technique and the factors involved are similar to those employed in the roentgen therapy for the earlier stages of the disease.

Within the last decade, roentgenologists have again become intrigued with the idea of irradiating carcinoma of the cervix directly by means of specula (cones) attached to the x-ray tubes. Although this way of administering treatment had been disappointing when the low-voltage x-rays were employed, it was thought that the harder ray, now available, might be used to advantage in this manner. A technique for this intracavitary treatment was developed and presented by Merritt of Washington. Impressed by his work, we adopted his technique in selected advanced cases at the Philadelphia General Hospital[11]. Later, as we became more familiar with the technique, and after assuring ourselves of its benefit, we broadened our indications, to include patients in Stage III.

Transvaginal high-voltage roentgen radiation (cone therapy) utilizes the ordinary high-voltage x-ray machine. In our work 200 K. V. were employed. The cones are chromium-plated steel tubes lined with 0.5 mm. lead. (Figure 1).

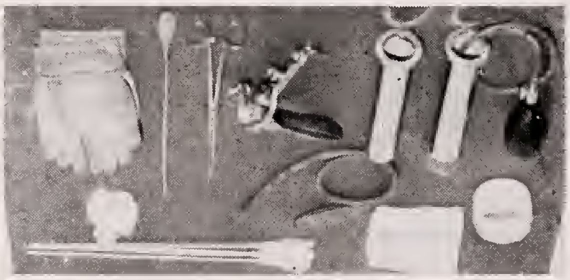

Figure 1. Upper Row, left to Right: Lubricant, Gauze Sponges, Deflated Prostatic Bag; Applicators and Cotton Balls.
Lower Row: Left to Right: Prostatic Bag in Steel Cone with attached Manometer Bulb for Inflation, Spare Cone, Speculum. Uterine Dressing Forceps, Uterine Sound and Rubber Gloves.

By means of an adapter they are attached to the conventional x-ray tube. The overall length of the cone is 50 cm. The cones vary in diameter from 1.5 to 3.6 cm., to be adaptable to varying sizes of vaginas, and the diameter of the cone most frequently employed is 3.3 cm. Cones are available with either straight or beveled distal ends. Either type may be preferable, depending upon the position of the cervix and the conformation of the posterior vaginal vault. A hard rubber obturator with a smoothly rounded end, attached to a steel shaft, snugly fits the lumen of the cone, and facilitates the introduction of the tube and avoids pinching of the vaginal walls. Recently, instead of the obturator, we have been using an inflated rubber, prostatic balloon. This protrudes from the distal end of the cone and, after its introduction, is easily removed by deflation. The adapter is fitted with a periscopic finder, enabling the growth to be visualized after the apparatus has been inserted and connected to the x-ray machine. (Figure 2).

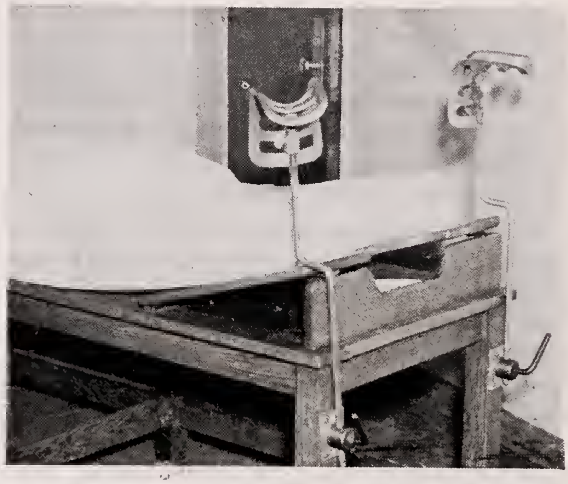

Figure 2. Table Adapter for Leg Holders and Adjustable Elevation at the Foot End.

We have found a well-padded, flat-top, wooden kitchen table, 27 inches high, with ordinary stirrups at the foot end, a satisfactory apparatus, on which to place the patient for treatment. An 18-inch leaf is hinged to the foot of the table. By elevating this the pelvis can be raised 6 to 12 inches, as required, to bring the vaginal outlet in line with the adapter, attached to the tube of the x-ray machine. (Figure 3). The patient is placed in the lithotomy-position, with the buttocks on the edge of the aforementioned lift.

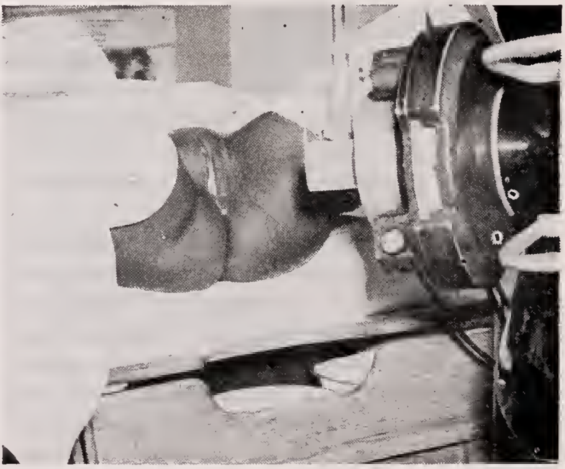

Figure 3. Patient Placed on Table and Draped. Cone Adapter with Periscope Attached to X-ray Tube.

While the labia are separated with one hand, the well-lubricated cone, with the balloon in place, is gently inserted into the vagina. The balloon is now withdrawn and the distal end of the cone, under direct vision, is placed over the lesion on the cervix. (Figure 4). Holding the cone in place, the table is moved into the position necessary to attach the proximal end of the cone to the adapter, fastened to the x-ray tube.

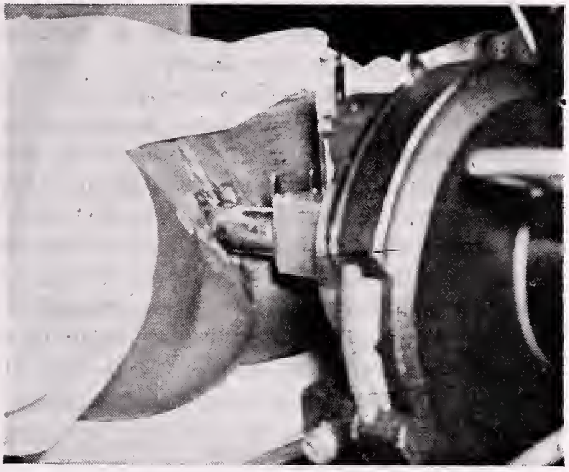

Figure 4. Patient in Lithotomy Position, Draper with Cone Inserted in Vagina and attached to Adapter, which in turn is attached to the X-ray Tube.

Each patient receives a preliminary series of external high-voltage x-ray therapy. When the external irradiation is well tolerated, transvaginal therapy may be given coincidentally. If poor tolerance for the external irradiation is shown, the transvaginal treatment, consisting of 6000r in air or 6900 tissue roentgens, is deferred until the course of external irradiation has been completed. Intracavitary irradiation seldom causes any untoward reaction. The transvaginal treatments are given on alternate days, and 500 r are administered through the cone at each treatment. A second series of external irradiation, similar to the first, is given six to eight weeks after completion of the cone therapy.

We have been impressed with this therapy for Stage IV cases of carcinoma of the cervix. Thirty-three patients treated in this manner lived twice as long as 161 cases who were treated with external high-voltage therapy alone. Thirty-six patients in Stage III, treated with cone therapy and external high-voltage, showed no apparent difference in the duration of life after treatment, when compared with Stage III cases that had been treated with external high-voltage x-ray therapy and radon irradiation.

We are convinced of the value of high-voltage x-ray therapy in treating carcinoma of the cervix. It can be applied safely externally or by the transvaginal approach, regardless of the extent of the lesion. Immediate results in checking hemorrhage and relieving pain are striking. In the far advanced lesions it is superior to any other type of treatment with which we are familiar. Its use is without hazard, except in patients who have had supravaginal hysterectomy, where the intense irradiation by the transvaginal method may cause serious injury if a loop of bowel is adherent to the stump of the cervix. In such cases we emphatically advise gastro-intestinal x-ray studies to determine the relationship of the cervical stump with the gastro-intestinal tract.

Radium therapy has been indicated as the cause of vesico and recto-vaginal fistulas. Errors in estimating the extent of growth, overdosage, and inadequate filtration have unquestionably produced such sequelae. That this is not the case if the treatment is skillfully conducted was shown by the study of a series of 166 patients who had died of carcinoma of the cervix[12]. In these (Table 1) fistulas were found in 26 per cent of 80 patients who had been irradiated, whereas in 86 patients who had received no irradiation fistulas were found in 31 per cent of cases. It seems probable that these sequelae are more often due to the carcinoma than to properly administered radium therapy. It is generally inadvisable to attempt repair of such lesions, since the poorly vascularized fibrous tissue seldom heals satisfactorily, and surgical manipulation may liberate cancer cells that have become en-

Table I

Patients		Fistulas	
Treatment	No.	Vesico-vaginal	Recto-vaginal
Irradiated	80	15	6
Untreated	86	22	5

Incidence of fistulas is no greater in irradiated patients.

meshed in scar tissue.

Table 2

Patients		Dilated Ureters	
Treatment	No.	No.	Per cent
Irradiated	80	46	58
Untreated	86	63	72

—Ureteral dilatation occurred less frequently in the patients who had been irradiated.

Ureteral obstruction has also been ascribed to the periureteral fibrosis and edema subsequent to irradiation therapy. The above study revealed ureteral dilatation in 72 per cent of the patients who died of cervical cancer without having received any treatment. On the other hand, only 58 per cent of the radiologically treated patients had dilated ureters when they died.

Cancer of the cervix is generally thought of as rarely causing metastases beyond the pelvis. Careful post-mortem examinations disclosed that in 55 of 166 patients who died of carcinoma of the cervix metastases were found.

Their distribution was as follows:

Abdomen—	60 per cent
Thorax—	..25 per cent
Skeleton	15 per cent

The dissemination of the disease appeared to have been via lymphatics and the distance from the pelvis was in direct proportion to the time from the onset of symptoms to the death of the patient. Recurrent carcinomatous nodules at the sides of a fistulous tract can sometimes be destroyed without breaking down the protective scar-tissue zone by inserting radon needles into the individual nodules. The dosage of each needle should not exceed 2 mc., and the needles must be inserted at least 1 cm. apart.

Carcinoma of Cervical Stump Following Supravaginal Hysterectomy—Carcinoma probably develops in the cervical stump in about the same frequency as in cervices from which the body of the uterus has not been removed. The diagnosis of carcinoma in the stump offers no particular difficulty.

Prophylaxis — Total hysterectomy should be performed when the cervix is diseased or when leukorrhea is a prominent symptom. If, for some reason, in these cases, total hysterectomy is contraindicated, supravaginal hysterectomy may be performed and, after biopsy, the cervix deeply coned out and cauterized. If this routine is followed, the incidence of carcinoma in the stump will be extremely small since only healthy or well-healed cervices are left **in situ**, and it has been proved again and again that carcinoma rarely develops under such circumstances. Studies of stump carcinoma show that many of these cases occur soon after hysterectomy for myomata, endometriosis or pelvic inflammations without examination of the cervix[13].

Treatment — This is similar to that previously described. The danger of a loop of intestine, adherent to the upper portion of the stump, must be remembered. Roentgenologic gastrointestinal studies will elucidate the situation. When doubt still exists, a small vaginal incision into the cul-de-sac should be made. If adhesions are found and cannot be separated vaginally, they should be released through an abdominal incision. Otherwise, intracervical radium irradiation or transvaginal high-voltage x-ray therapy applied to the cervix may produce grave injuries.

Table 3

No. Ca. Cervix	Incidence Stump Ca.	Salvage Co. Cervix	Salvage Stump Ca.
I 752	7.4%	28.5%	44.2%
II 273	5.02%	20.5%	42.8%
III 1764	3.9%	10.4%	24.0%

—Salvage is twice as great in "Stump Cancer" as in Carcinoma of the Cervix in general.

I Woman's Hospital
II Jefferson
III Univ. and Philadelphia Gen. (combined)

Data collected from a number of hospitals, in which the salvage rate in patients with "stump carcinoma" was compared with that for cancer of the cervix with the fundus attached, showed that the percentage of "five-year cures" for cancer of the stump averaged approximately twice that for general cervical carcinoma. These better results were doubtless due in a large degree to the fact that the lesions were detected earlier because of the routine follow-up examinations after hysterectomy, and women, after hospital experience, are probably less reluctant to submit to gynecologic examinations and more alert to report abnormal signs of bleeding and discharge. Hysterectomy is followed by a certain degree of fibrosis of the parametria, and this may act as a barrier to rapid lymphatic permeation.

Carcinoma of Cervix Complicated by Pregnancy — Carcinoma of the cervix is usually diagnosed after the age of greatest fertility, and pregnancy is an infrequent complication. Carcinoma associated with pregnancy is prone to exhibit marked malignant tendencies, to grow rapidly, and to produce early metastases. These patients are younger than the usual carcinoma age and this, in itself, is an unfavorable factor since the disease is, as a rule, more malignant in youth, and early diagnosis and treatment is especially important. During pregnancy lacerations and eversions become more vascular and friable, and bleed more readily. Early malignant lesions are easily mistaken for erosions, and bleeding is attributed to the pregnancy itself. Even if a suspicious lesion is discovered, there is a reluctance to perform biopsy for fear of interrupting the pregnancy. Whether or not the presence of carcinoma is suspected, hemorrhage during pregnancy requires careful investigation and its cause should be determined without delay. Suspicious lesions should immediately be excised for microscopic examination.

Treatment — In general, the fetus may be disregarded and all efforts should be directed to the cure of the carcinoma. Occasionally, when an advanced and obviously incurable carcinoma is discovered in the later months of gestation, it is justifiable to delay the treatment in order to increase the infant's chances of survival. Such patients should be delivered by cesarean section, and irradiation should be applied as soon as is practicable. In the early months of pregnancy the uterus should be emptied and irradiation given without delay. The work of Douglas P. Murphy has clearly demonstrated the danger to the fetus, of post-conceptional therapeutic irradiation, either by radium or the x-rays. Abortion. Most gynecologists are in agreement saved, mal-development, idiocy, or microcephaly is prone to occur. The uterus may be emptied from below or by abdominal hysterectomy, depending upon the size of the fetus and the condition of the cervix. Cervical carcinoma is generally highly infectious, and vaginal delivery is likely to be attended by tears, infection, rapid dissemination of the disease, and other complications. As a general rule, vaginal delivery should be avoided in the later months of pregnancy and an abdominal cesarean section, followed by irradiation, is the method of choice. If judiciously managed, these cases frequently result in a larger salvage than the average cases of uncomplicated carcinoma of the cervix.

Table 4
Carcinoma Cervix — Pregnancy

Age	Preg. Mos.	Stage	Sympt. Mos.	Salvage
39	5	III	4	13 mo...living
39	5	II	4½	2 mo. living
32	3½	Polyp	24	3 yrs. dead
31	2	III	1	2 yrs. dead
29	2	I	3-4	16 yrs. living
29	6	II	4	15 yrs. living
28	Term	II	0	5½ yrs. living

—Sixty per cent 5-year salvage. Early lesions predominate

The reason for this is doubtless the great number of early lesions discovered in the course of the routine examinations required in the course of pregnancy.

Table 5
Carcinoma Cervix — Post Natal

Age	Post Natal	Stage	Sympt. Mos.	Salvage Status
29	3 mos.	III	9	11 mos. living
31	14 mos.	II	17	5½ yrs. living
22	2 mos.	III	2	15 yrs. living

—All patients still living. 66.0% well more than 5 years. Note youth of patients. Lesions Stage III, or earlier.

Follow up — Patients, after treatment has been completed, should be interviewed and reexamined at intervals of every four to six weeks for the first and second years, and at two-month intervals thereafter. They, furthermore, should be instructed to report at once if there is recurrence of bleeding, discharge or pain. This follow-up is for the purpose of keeping accurate notes on the progress of the case, and to detect recurrences at the earliest possible time. It is important, too, in patients in whom the disease is progressing in spite of treatment. Nothing is more demoralizing, to a patient with progressively deteriorating health, pain and despair, than to be deserted by her trusted physician. No one else is capable of providing the reassurance and advice necessary to maintain her at optimum morale and comfort. Patients who have had carcinoma, if improved, should be followed for the rest of their lives. Those who cannot be salvaged should be supported until their death.

Carcinoma of the Body of the Uterus. This disease, occurring about one third as frequently as carcinoma of the neck of the uterus; is seen in about 15 per cent of carcinomas of the genital tract. The characteristic symptom of this neoplasm is scant, irregular bleeding, usually post-menopausal. The disease, most frequently is discovered in the fifth decade of life but, as in carcinoma of the cervix, malignant lesions of the fundus may lie quiescent for years, and, since diagnostic curettage has become more popular, has been discovered in younger women. Vaginal smears, stained by the Papanicolau method, sometimes call attention to an otherwise unsuspected fundal carcinoma. Such a finding should always be confirmed by a diagnostic curettage before radical cancer treatment is instituted. In many cases biopsy material can be obtained in the office or clinic by the use of the endometrial suction curette. If, however, these office procedures fail to reveal carcinoma, the patient must be hospitalized and subjected to a thorough, formal, diagnostic curettage under light anaesthesia.

There is more unanimity of opinion regarding the proper treatment for carcinoma of the fundus than is the case for carcinoma of the cervix. Formerly, total hysterectomy and bilateral salpingo-oophorectomy was the universal treatment for this condition in all cases where the malignant disease was confined to the body of the uterus. After extension to the parametria, various palliative procedures, all unsatisfactory, were resorted to. With the introduction of radium, this element was used in cases of inoperable carcinoma of the fundus and was found to be effectual in controlling bleeding and prolonging life. This manner of treatment was later utilized in cases where, because of some systemic disease, operation was contraindicated, and arrest of the cancer occurred in a surprising proportion of the cases. Later, some clinics made reports which indicated that the results of radium irradiation might be superior to those secured by the radical hysterectomy.

Healy and Cutler[16] classified cancer of the fundus, similarly to the method suggested by Kaufman and Ewing, into: Grade I, papillary adenoma malignum; Grade II, adenoma malignum; Grade III, adenocarcinoma; Grade IV, diffuse (anaplastic) carcinoma. These authorities report three to five-year cures in 58.5 per cent of all types of fundal carcinoma treated by irradiation alone. In their opinion, the diffuse type (Grade IV) should be treated routinely by radiotherapy.

Heyman [17] reports a series of 459 cases of corpus cancer, treated by packing the endometrial cavity with multiple, small radium containers, in which he obtained five-year salvage in 61.9 per cent of cases. On the other hand, Miller[18] had 77.0 per cent five-year survivals in 96 cases of carcinoma of the fundus, for whom total hysterectomy and bilateral salpingo-oophorectomy were done, six weeks after preoperative high-voltage x-ray therapy. Scheffey[15] advocates preliminary intrauterine radium therapy, followed after a six-weeks interval by total hysterectomy and bilateral salpingo-oophorectomy he has achieved 90 per cent five-year salvage in a small series of cases. At hysterectomy, following preoperative radium irradiation, he found residual carcinoma still present in 54.8 per cent of cases. Such findings indicate that, while adequate irradiation will sometimes completely destroy radio-sensitive carcinoma of the fundus, hysterectomy should follow in order to eradicate radio-resistant cancers for which the irradiation has caused incomplete destruction. Most gynecologists the in agreement that some type of preoperative irradiation is desirable and that total hysterectomy with ablation of both adnexa should follow when the irradiation reaction has subsided. Postoperative x-ray therapy is widely practiced.

Whether the preoperative irradiation is administered from an external source, by means of high voltage x-rays, or from within the uterus, by intrauterine radium, appears to be of questionable importance. In our clinic all operable cases are treated by total hysterectomy and bilateral salpingo-oophorectomy.

If the microscopic diagnosis of carcinoma can be made from material secured in the clinic or office by means of the suction curette, preoperative high-voltage x-rays are employed. The patient, thereby, is spared hospitalization until the radical hysterectomy is performed. If, however, curettage is required in order to obtain material for histologic examination, the intauterine radium is inserted at that time. The scrapings are fixed at once and examined by a quick paraffin method. Should the diagnosis fail to confirm the presence of cancer, the radium is removed when the appropriate dosage for benign uterine bleeding has been given. If the microscopic diagnosis proves the presence of carcinoma, the radium is permitted to remain within the uterus until a carcinoma dose of 3600 to 5000 mgmhrs., depending on the depth of the uterus, has been applied. In such a case, the preoperative irradiation will be completed coincident with the convalescence from the curettage, and the patient will be spared the inconvenience of repeated high-voltage x-ray treatments, and the indisposition which so frequently attends them. A series of postoperative x-ray therapy is given six weeks after the radical surgery. For advanced lesions, intrauterine irradiation, followed by high-voltage x-ray therapy, is undoubtedly the method of choice. Irradiation will cure a small proportion of advanced cases, and is the best palliative treatment at our command. In cases of carcinoma of the fundus complicated by advanced age or other conditions, such as grave cardiac, pulmonary, hepatic, or renal disease, that render hysterectomy especially hazardous, irradiation is the favored treatment. After the diagnosis has been established, the radium or radium emanation should be applied within the uterine cavity as close as possible to the site of the lesion, 3000 to 5000 milligram hours being given, followed by a complete course of high voltage x-ray therapy.

Thirty-five years have elapsed since radium was first used for the treatment of gynecologic diseases by Dr. John G. Clark and Dr. Howard Kelley. During this epoch the use of radium has been extended from inoperable to borderline cases of cervical cancer and has eventually supplanted the radical operation for all stages of this disease. Greater familiarity with the physics of radium and appreciation of the importance of filtration have permitted the use of this element in larger dosages. Ingenuity in application enabled better cross-firing. Standardization of x-ray equipment, mechanical improvements leading to the production of rays of higher voltage and shorter wave lengths provided a valuable supplementary irradiation from external sources. Advances in serology, hematology, chemotherapy and the introduction of antibiotics reduced the hazards of radical surgery and permitted its wider application. These developments have enhanced the management of pelvic cancer, particularly in respect to the control of pain and prolongation of life. The salvage, however, has been increased by only 10 to 15 per cent and is far short of expectations. Enormous expenditures of money and time have been made in search of the cause of, and a cure for, cancer. Meanwhile, information and equipment necessary to improve the salvage by at least 100 per cent has been available. Only the initiative to apply this knowledge has been lacking.

Table 6

Cancer of Cervix

*Clinic	Stage I	Stage II	Stage III	Stage IV	5-Yr. Salvage
1	12.0%	10.0%	54.1%	23.9%	26.0%
2	6.5%	11.7%	36.7%	45.1%	20.0%
3	20.2%	44.1%	31.3%	4.4%	26.5%
4	5.0%	20.8%	57.7%	16.5%	35.8%
5	10.9%	37.7%	40.4%	11.0%	35.3%
6	9.9%	30.5%	38.2%	21.4%	23.5%

*

1—Memorial Hosp. N. Y.
2—Buffalo State Inst.
3—Woman's Hosp. N. Y.
4—Marie Curie
5—Inst. du Radium
6—Radiumhemmet

—End Results : Similar with various techniques. Salvage depends mainly on degree of involvement. (Annual report, League of Nations — Vol. IV, 1941)

Table 6 illustrates the similarity of results secured in various clinics, employing different techniques, in various parts of the world. An increased number of five-year arrests can usually be attributed to a greater percentage of early cases in the series.

Table 7
Cancer of Cervix

*Clinic	No. Patients Treated	Salvage Rate Stage I	Actual No. Salvaged	Potential Salvage No.
1	401	64.4%	106	259
2	1337	63.2%	273	845
3	569	54.8%	151	311
4	802	83.0%	287	665
5	1310	66.4%	462	869
6	2387	54.4%	561	1298
Total	6806		1840	4247

*

1—Memorial Hosp. N. Y.
2—Buffalo State Inst.
3—Woman's Hosp. N. Y.
4—Marie Curie
5—Inst. du Radium
6—Radiumhemmet

—In this series of 6806 cases, 2407 lives were lost because of delay in diagnosis and/or treatment.

Table 7 illustrates the percentage of five-year salvage which could have been anticipated if all of these lesions had been treated in the early stages. If the diagnosis had been made and treatment instituted while each lesion was in Stage I, the salvage rate would have been tripled. Realization of a salvage rate of at least 75 per cent for uterine cancer should be the minimum objective of the medical profession. Such an achievement would be greater than any that has been attained in the past thirty-five years, despite the discovery of radium and a stupendous research program. The realization of this goal requires only the cooperation of every physician who treats women. The family doctor is more important for its attainment than are specialists in radiology and gynecology.

Sensational articles on this subject recently appearing in popular magazines are regrettable in that, on one hand, they misinform and needlessly alarm the public while, on the other, they encourage unwarranted expectations. Nevertheless, the interest shown by the laity in this type of literature proves its timeliness. Rather than to heap opprobrium on such authors, might it not be better to acknowledge our remissions for failing, ourselves, to provide authentic data for the information and education of the public? The American Cancer Society, composed of public-spirited citizens, the majority doctors, is conducting a well-planned campaign of education and propaganda, designed to direct patients suffering from cancer to proper treatment before their disease becomes incurable. Advertisements in public conveyances and billboards, articles in newspapers and popular magazines, lectures and moving picture demonstrations to lay audiences, information centers where the general public can secure correct advice regarding cancer have already brought many patients to us in the earlier stages of carcinoma.

The American Medical Association, the American College of Surgeons, county medical societies and organizations of specialists are initiating crusades designed to reduce cancer mortality. They encourage the organization of tumor clinics, provide postgraduate instruction in techniques of diagnosis and treatment of cancer. Their purposes can reach fruition only with the total participation of the medical profession. The family physician must be impressed with his importance in the dissemination of accurate information regarding the need of regular, periodic, semi-annual health examinations, his obligation to train and equip himself to participate in this work, and his responsibility to expedite early diagnosis and treatment. If it is impractical for an individual physician to make these examinations himself, it is his duty to direct patients to persons or clinics, where the proper observations can be made. The public demand for periodic health examinations is growing rapidly, and physicians who neglect this phase of practice are not only negligent but overlook an important source of revenue and prestige. Abnormal bleeding or discharge imposes on the attending physician the responsibility of disproving carcinoma before prescribing hormones, drugs or douches. Every doctor dealing with women over 35 years of age should encourage them to submit to examination of the breasts and pelvic organs at least twice a year. Every adult woman admitted to hospital should be given a routine examination of these organs. This has been a practice of the medical service of the University Hospital in Philadelphia for many years, and has led to the recognition of many unsuspected diseases of the pelvis, including cancer. During one four-month period, biopsy of suspicious lesions disclosed three early carcinomas of the cervix from this service, and immediate treatment resulted in the survival of more than seven years in each case. Two of these patients are still living, the third having died of cerebral hemorrhage. Without waiting for startling new discoveries in this subject, the combined efforts of the entire medical profession can achieve results surpassing any relating to carcinoma, since the beginning of medical history.

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Carcinoma of the Lip*

(Guest Editorial)

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CARCINOMA of the lip is a lesion that, in good hands, has been well treated over a period of many years. It is also true that in less experienced hands it has been maltreated over a longer period of time.

Carcinoma of the lower lip has long been called by many "pipesmoker's cancer," the idea being that the constant trauma and heat from the pipe stem were responsible for the trauma causing the lesion. If this were true then the lesion should appear as frequently on the upper lip as the lower. This of course is not true as the ratio of upper to lower lip lesions is about 1:30. An additional proof that this is not true is the location of lesions along the lower lip. They occur no more frequently in the pipe carrying lateral region than in the center. Actually, carcinoma of the lower lip seems to occur most frequently in white males who are exposed to the sun and wind over long periods of time. Areas of leukoplakia and syphilitic infection are often precursors.

Lesions of the lower lip are usually of three types: ulcerating, verrucous, and exophytic. They are usually epidemoid in type and show a moderate degree of differentiation microscopically. It is generally agreed that they metastasize late. The larger the lesion the earlier the metastasis. The metastatic spread follows a rather set pattern, being usually to the submaxillary glands of the same side, and more rarely to the submentals of the same and less frequently of the opposite side. Distant metastases are seldom seen.

Clinically there is nearly always a long standing history, starting with a history of blister formation which scabs over recurrently and leaves a bleeding ulceration that does not heal. Cancer seldom develops on a normal lip. H. E. Martin reported that of 233 cases seen without apparent metastases only twelve per cent developed them after treatment of the primary lesion. An occasional case will be seen first because of a lump in the neck from metastasis. Although most frequently seen in the 50 plus age group and mostly in white males, young individuals in the teens are occasionally seen with the lesion.

Herpes, cheilitis due to vitamin B deficiency, hemangiomata, leukoplakia, and leutic chancres are to be differentiated.

The treatment of carcinoma of the lower lip has yielded a high percentage of cures over a period of many years. They may be treated with equally good results whether by roentgen therapy or by surgery, depending mostly on adequate expert treatment in either method by well trained and experienced men.

Surface or external roentgen therapy is preferable over other forms of radiation treatment. Because of excessive fibrosis and scarring, interstitial radium has generally been discarded.

Surgery is believed to be preferable in lesions:

1. That are small and occurring on thick lips on a wide mouth.
2. That are very extensive which will require plastic surgery to repair the defect.
3. That are large and have already metastasized, to allow earlier care of the metastatic adenopathy.
4. Which have been inadequately treated with roentgenotherapy.

"V" wedges or plastics will suffice in the large number of patients treated surgically. It is a simple procedure and does not require prolonged hospitalization. For more extensive lesions of the lips, plastic procedures in which portions of the cheek, the upper lip, or pedicle grafts are necessary. Where palpable nodes are present suprahyoid neck dissections are to be done. It is believed that these are best performed after the primary lesion is controlled. Where the metastases extend beyond the submaxillaries and into the cervicals radical neck dissection is done on the involved side.

The greatest difference of opinion as to therapy centers around prophylactic suprahyoid neck dissections. In former years most men of wide experience favored routine neck dissections of the suprahyoid type. In 1918 Sistrunk of the Mayo Clinic advocated prophylactic neck dissections regardless of whether nodes were palpable or not. He reported a 95 per cent cure rate. In the last few years these methods have been questioned. In 1944 Eckrt and Petry, Barnard Skin & Cancer Clinic and in 1947 McClure of Henry Ford Hospital and Tumor Clinic reported favorable results by simple excision of the primary tumor without doing prophylactic suprahyoid sections where suspicious nodes were not found. Indeed, the cure rate reported was about the same as those figures of Sistrunk, being 95 per cent. The arguments against prophylactic dissections are the increased morbidity, the slightly increased mortality, and the fact that there is such small percentage (about 12% of the lip lesions that will show metastases after adequate treatment of the primary lesion. In all cases however the patient should be seen at two and three month intervals and closely observed for the appearance of metastases.

The argument for prophylactic neck dissections are of course based on the further increased morbidity and mortality which results when neck dissection is done therapeutically after nodes appear. These arguments however seem to favor the former method, at least at the present from available figures.

Carcinoma of the upper lip of course occurs less frequently than of the lower lip in a ratio of about 1:30. This may be caused by the better protection the upper lip receives from actinic rays.

Tumors of the upper lip are usually epidermoid carcinomas, but may be salivary or mucous gland tumors, or hemangiomata. They metastasize earlier than those of the lower lip and to the upper cervical, preauricular, and submaxillary nodes. Metastases occur more frequently than in lesions of the lower lip.

The treatment is usually best carried out by any type of radiation therapy, except for spindle cell carcinomas and salivary gland tumors which are best treated by surgical excision and plastic repair by Eastlander method which rotates a triangle of the lower lip into the defect in the upper lip.

The prognosis is not so good as in the lower lip. Only about 40-45 per cent five-year cures are reported.

Carcinoma of the Stomach*

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Greenville, Miss.

During the past seventeen months we have seen in our clinic in Greenville, Mississippi, twenty new cases of cancer of the stomach. Of this number four were grossly inoperable because of widespread metastasis, two refused surgery, nine were explored but closed at once because of extensive intra-abdominal metastasis, two had palliative type of surgery, and three were subjected to gastrectomy.

Three cases out of twenty, or only about 15 per cent were seen early enough by the surgeon to permit him to perform gastrectomy with any hope of obtaining a cure.

I believe that patients with cancer of the selves for examination earlier than they have in the past. This is undoubtedly due in large part to the publicity of the American Cancer Society which has educated the public to be on the lookout for lumps in the breast or abnormal discharges from any part of the body orifices. This publicity is now bearing fruit in the form of the earlier diagnosis of cancer of the breast, uterus and rectum.

Still there seems to be no great improvement in making earlier diagnosis of cancer of the stomach. This regrettable state of affairs is the reason for my discussion today.

INCIDENCE: Between thirty and forty thousand people in the United States die yearly of gastric cancer. Approximately one fifth of all cancer is cancer of the stomach. It is the number one site of cancer in the male and the number two site of cancer in the female, being second only to cancer of the uterus.

According to statistics obtained from Dr. Whitfield there were 252 deaths in Mississippi from cancer of the stomach in 1946, with 130 of these in white and 122 in colored patients. From 1941 through 1946 there were 710 cases of cancer of the stomach in the white race and 729 in the colored race in the state of Mississippi. Since the population of Mississippi is roughly half white and half colored this would indicate about an equal incidence in the two races.

REASONS FOR DELAY IN DIAGNOSIS: As common as cancer of the stomach is, the diagnosis is usually made so late as to be of little benefit to the patient. Let's look at the reasons for this late diagnosis:

1. Cancer of the skin is readily visible. Cancer of the breast may be easily palpated. Cancer of the rectum, with its frequent changes in bowel habits, fairly cries out to be diagnosed. But cancer of the stomach may remain symptomless until it has reached an advanced stage.

2. The patient with cancer of the stomach often treats himself with many medications over a considerable period of time instead of asking help early from the medical profession. Over one half of the patients with cancer of the stomach do not enter the hospital for surgery until symptoms have been present for over five months.

3. All too often the physician himself may fail to recognize the significance of the patient's early complaints and may treat him for additional months without establishing a definite diagnosis instead of submitting him at once to a thorough fluoroscope and x-ray examination by a competent roentgenologist. If this should happen more time is wasted and the lesion may become irresectible before the patient finally falls into the hands of a surgeon.

The diagnosis of cancer of the stomach is not usually so difficult to make. The important point is to suspect the diagnosis early enough and to have it confirmed or disproved by thorough examination early in the course of the disease before metastases have already taken place. If we can perform gastrectomy while the lesion is still confined within the walls of the stomach we can expect a five-year cure in about 50 per cent of the cases.

Such early diagnosis will give the patient a better prognosis than he has had in the past. In 1914 Friendenwald reported that gastric resection was possible in only 3.3 per cent of 1,000 cases of cancer of the stomach. From 1918 to 1920 resection was possible in 20 per cent of 1,408 cases at the Mayo Clinic and from 1920 to 1924 it was possible in 25 per cent of 2,087 patients in the same institution. Counseller, reporting the cases in the Mayo Clinic from 1928 to 1943 stated that one half of those operated were resected and this represented 30 per cent of those in whom the diagnosis was made. At the Lahey Clinic over the ten-year period from 1936 through 1945, 653 patients were operated for cancer of the stomach and resection was possible in 441 per cent. These facts tell us that, though the results with cancer of the stomach are not what they should be, there has nevertheless been a great improvement.

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*Read before the Section on Surgery at the annual meeting of the Mississippi State Medical Association, May 9-11, 1947, Biloxi. Miss.

ORIGIN: Looking for a moment at the origin of the stomach we note that it has its origin in the glandular cells of the mucosa and can arise in a chronic gastric ulcer or in an adenomatous polyp. Presumably it could arise in some other type of lesion such as an area of chronic gastritis but for practical purposes we know that it begins in an ulcer or in a polyp.

It occurs twice as often in the male as in the female and usually on the lesser curvature and posterior wall at the pyloric end of the stomach. However it may occur anywhere in the stomach. Grossly it appears either as an ulcer or a cauliflower-like growth in conjunction with an ulcer or polyp but it may infiltrate widely the walls of the stomach giving rise to the linitis plastica type of stomach.

It is not always possible to tell by examination with the naked eye, even at the operating table, whether a lesion of the stomach is benign or malignant. A large ulcer can be benign or a small one can be malignant. Six per cent of gastric cancers at the Mayo Clinic were found to be associated with ulcerations less than 2 1-2 cm. in diameter. Generally speaking the larger the ulceration the greater the chances of malignancy.

An important thing to remember is that about 10 per cent of all gastric ulcers are malignant. For this reason we feel that surgery is indicated at once in any case in which there is a definite gastric ulcer. The one possible type of case in which a short delay for medical treatment might be justified is in a small ulcer of short duration located on the lesser curvature of the stomach in a young man.

There is definite danger in the delay incident to medical treatment of gastric ulcers because 80 per cent of cancers of the stomach will show a temporary improvement if placed on a carefully restricted medical regimen. This temporary improvement might easily fool the unwary physician by making him believe a gastric ulcer to be benign when in reality it was malignant. Such a delay could cost a patient dearly.

While benign tumors of the stomach do occur they are rare. Ninety-five per cent of tumors of the stomach are carcinomatous. Of 464 patients with a tumor of the stomach seen at the Lahey Clinic between 1939 and 1943 only nine were benign, fifteen were sarcoma, and the other 440 were carcinoma. With such a high incidence of carcinoma of the stomach we are bound to consider any tumor of the stomach to be cancer until it has been proved otherwise.

The average age of patients with cancer of the stomach of a series from the Mayo Clinic was 54 years; of our short series being presented here it was 61. Cancer of the stomach must not be considered a disease of the elderly alone. I have recently seen a case in a man 35 years old, and while I was in Rochester I saw one in a nurse in her teens.

DIAGNOSIS: The clinical picture of cancer of the stomach as taught in medical school, even as recently as when I was there, was unfortunately that of the advanced stage of the disease. By the time a patient develops an Ewald node, loses a tremendous amount of weight and strength, has a mass in his abdomen and has vomited coffee ground material, his disease is already far advanced and there is nothing the surgeon, or any one else in our present state of knowledge, can do for him. What we must do is to suspect the diagnosis earlier.

Incidentially, it is not widely appreciated that a true or potential gastric carcinoma in the form of a chronic gastric ulcer or a polyp can exist with little or no indigestion and without loss of weight or appetite or the presence of any palpable tumor.

How then are we to make the diagnosis in time? Every patient who has unexplained anemia or weight loss, epigastric pain or indigestion, attacks of vomiting or of hematemesis should be subjected at once to a thorough examination to rule in or out the presence of gastric carcinoma. This examination should consist of a fluoroscopic and x-ray examination by a well-trained roentgenologist, and to this may be added gastroscopic examinations and the examination of the fasting gastric contents by the Papanicolaou technic for the demonstration of malignant cells.

Gastric cancer may be painless or it may simulate the pain of duodenal ulcer. Any patient with vague indigestion deserves a careful x-ray examination of his stomach. This examination may need to be repeated and if, even after repeated x-ray examinations, the presence of a lesion is not demonstrated though it is suspected we may even be justified in going ahead with an exploratory laparotomy rather than run the risk of overlooking a malignancy.

Treatment: As to the treatment of cancer of the stomach, there is no treatment except surgery. The fundamentals of surgical treatment are to remove widely the lesion with all adjacent lymph node bearing tissue and to reconstruct the gastro-intestinal tract in such a fashion that it will function satisfactorily. Lymph nodes above and below the pylorus and along the lesser curvature of the stomach, as well as the greater omentum should be removed. The fact that lymph nodes are enlarged does not necessarily mean they contain cancerous cells as sometimes inflammatory reaction alone may cause such enlargement. We usually perform a subtotal gastrectomy employing a Hoffmeister modification of the Billroth 2 operation with a retrocolic anastomosis. The mortality of subtotal gastrectomy should not be over 5 or 6 per cent.

Total gastrectomy, and this would of course mean removal of all the stomach with a portion of the duodenum and esophagus, is being performed more frequently than formerly. Prior to 1934 there had been only twenty total gastrectomies performed at the Mayo Clinic. Total gastrectomy need be performed only when the lesion cannot be removed except by the total operation and when by so doing all visibly involved tissue can be removed. Recurrences following gastrectomy are rarely at the site of the original lesion but usually appear in the form of distant metastases. When total gastrectomy is performed the operation is made easier by the removal of the spleen and by the combined thoraco-abdominal or the thoracic approach. The mortality rate is said to be twice that of the subtotal operation. It may add something in life expectancy to those who survive it but it is not the answer to the question of cancer of the stomach. The answer at present lies in an earlier diagnosis.

As to the choice of patients for surgery we feel that unless the lesion can be definitely proved to have spread beyond the scope of surgery the patient should be given the benefit of exploration. X-ray examination cannot always be relied upon to tell whether or not a lesion is inoperable.

Palliative gastro-enterostomy has very little place in treatment of cancer of the stomach. It is usually better to do a palliative subtotal resection because the stoma of the gastro-enterostomy would soon be obstructed by the spread of cancer treatment.

Prognosis. As to the prognosis figures from the large clinics show that 5 per cent of resected cases of cancer survive five years. However, 50 per cent would survive this long if resection could be done at a time when the lesion were still confined within the walls of the stomach.

SUMMARY

The most important thing we can do at the present time to improve the very poor results in the treatment of cancer of the stomach is to suspect and confirm the diagnosis at an earlier date in the course of the disease. All patients with unexplained anemia, loss of weight, indigestion, general poor health, hematemesis, melena, or bouts of vomiting should be subjected at once to a thorough study including fluoroscopic and x-ray examination of the stomach by a competent roentgenologist. Only in this way will we be able to diagnose cancer of the stomach at a time when it is amenable to surgery.

DISCUSSION

Dr. Willard H. Parsons (Vicksburg): It is unfortunate that the very excellent paper which Dr. Archer has just presented was given before the surgical section. Surgeons make their own mistakes, but they do not see patients with carcinoma of the stomach first. This is a subject which ought to be presented before the medical section of this association, and before county medical societies, and it ought to be presented very often. General practitioners and internists have the first responsibility in this disease. The percentage of operability and curability would promptly rise if 1) every patient with dypepsia, certainly every patient over 40 years of age, were promptly referred to a competent roentgenologist; 2) he were gastroscoped when roentgenograms revealed a gastric lesion; and 3) a surgical consultation were promptly held if the lesion proved to be or suspected to be carcinoma of the stomach.

The present picture is not a happy one. I explore every patient in whom there is the smallest chance of resection, but not half of the patients I have seen in the past five years have fallen into that category, and not much more than a third have proved resectible. Moreover, in spite of the fact that I do an extremely radical resection, my record of five-year curability is not more than 10 per cent.

The explanation, of course, is simple. Occasional patients with obstructive carcinoma at the pyloric or the cardiac end of the stomach have early symptoms. In the remainder, the disease is likely to be advanced when it becomes manifest. It is the habit of patients, no matter when symptoms develop, to dose themselves for a while, sometimes a long while. I am sorry to say that it is frequently the habit of physicians, when they are consulted, to temporize and to delay before they order x-ray examinations and gastroscopy and surgical consultations. That is why 95 out of every 100 patients with cancer of the stomach die within three to five years of the onset of their disease, and often earlier, and why they practically always die miserably.

My own practice at operation, as I have said, is to be radical when I resect the growth. A curative operative procedure consists of removal of part or all of the stomach — total resection being a feasible operation today — together with removal of a margin of duodenum, the major portion of the gastrohepatic omentum, the lymph nodes along the left gastric artery, all of the greater omentum, and, if indicated, portions of the pancreas and the liver as well as of the spleen. It is important that the duodenum be closed effectively, a simple matter but one which requires care; carelessness in this regard means a stormy postoperative course and frequently it means death.

I do not personally like the Billroth I type of resection. An inadequate amount of gastric tissue is removed for fear of tension on the suture line, or tension actually occurs, with all its concomitant dangers. Gastroenterostomy adds little to the longevity of a patient and very little to his comfort. Jejunostomy is a procedure of despair. Resection is the best palliative procedure, just as it is the only curative procedure in this disease.

These technical details in all too many cases are merely academic. One must see patients promptly if they are to be applied. Our obligation as surgeons is today chiefly educational. Unless we assume it, carcinoma of the stomach will continue to present a somber picture. We must ourselves accept its challenge, and we must make our medical confreres accept it also. This is our first responsibility.

Dr. George Twente (Jackson): Dr. Archer's figures parallel generally those elsewhere. At the Mississippi Baptist Hospital there were 23 diagnosed cases admitted in the past two years; of these, fourteen were operated and two of these were closed; palliative procedures were done in six and five cases were resected, two were total gastrectomies; of these, one was palliative only. Dr. Archer has nicely pointed out the necessity for early diagnosis and the means for making the diagnosis. Of these, x-ray is the most important, but should be more frequently followed by gastroscopy where lesions are found or where there is doubt. Still x-ray diagnosis was incorrect from 10 to 15 per cent of cases of malignant ulcers. The Papanicolau technique could, I believe, be used more as men became trained in its technique.

Once the diagnosis is made, I believe immediate surgery should be done on cases: 1) where ulcer is of short duration - - patient over 50; 2) where ulcer is on G. C. or in prepyloric region; 3) where diameter is over 2.5 cm; 4) where there is no free Hcl; 5) where the ulcer is chronic on L. C.; 6) where the Papanicolau stain is positive.

Finally, if only those cases are counted which are resectible, 25 per cent will survive five years and 20 per cent ten years. As for technique, I believe, as has been reported from the Lahey Clinic, and from personal experience, that the abdominal approach for complete gastrectomy is preferred. The morbidity is less and the complications are fewer. Even with trans-abdominal approach Lahey reports 8 per cent mortality from chest complications alone. This has been the difficulty in a personal experience of one case. If medical men can make the improvement in early diagnosis in cancer of the stomach as Dr. Evarts Graham, Dr. Ochsner and others have done for carcinoma of the lung, then the operable cases will increase as will the five and ten year cures. About ten years ago Dr. Graham was reporting his first large series of cases. At that time only 12 per cent when seen were actually operable. Compare this with the figure of about 60 per cent that Dr. Ochsner has given from his series and you will note the improvement in ten years.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Dr. Rudolph Matas, the surgical dean of the world, now about eighty-eight years of age, attended the American Medical Association in Chicago at its last meeting. He is still keeping abreast of medical affairs of the world. Not so long ago he flew over to London for a meeting. His discussions of the papers and interpretation when in other than English were most helpful to English-speaking delegates. It is always an inspiration to see Dr. Matas.

The last meeting of the Northeast Mississippi Medical Society was held in Columbus. Papers were read by local essayists, J. M. Hanks. Dr. C. M. Murry, and Dr. Ralph R. Brand, guest speaker of Memphis, Tenn.

Dr. A. J. Stacy presided as president of the society with Dr. W. H. Cleveland as secretary. The state council dissolved the Thirteen Counties Society and the North Mississippi Society. We now go back to our original societies, but the way is left open for any county to petition membership into the Northeast Mississippi Society. The next quarterly meeting will be held in Monroe County in September, followed by the December meeting in Tupelo.

SOUTHERN MEDICAL MEETING

Miami, October 25-28

The fact that Miami offers enough hotel space to house the guests of a large convention comfortably, and that no other cities in the territory are now able to do that , with the fact that the Miami meeting in 1946 was one of the most felicitous and most enjoyed of the forty previous gatherings, have made this city again two years later the choice for the convention of 1948. There is no more beautiful and fascinating metropolis in the United States. The meeting dates the earlier than usual, October 25-28.

All scientific sectional meetings and clinical sessions of the Southern Medical Association will me held October 25-28 at Dinner Key, a tiny finger of land extending into Biscayne Bay, a site as beautiful as it is romantic for the part it has played in national progress. The technical scientific and hobby exhibits will be held at the same location.

National Essay Contest

The National Essay Contest sponsored by the Association of Physicians and Surgeons, offers again an award on the subject, "Why the Private Practice of Medicine Is for the Best Interest of the American People," and is limited to high school students throughout the United States.

Last year Betty Eckles, of Gulfport High School, won third place in the National Contest and this year George King, also of Gulfport High School, has won first place, which carries with it an award of one thousand dollrs.

ELECTED IN NATIONAL ORGANIZATION

Of interest to physicians in the tri-states is the recent meeting of the National Federation of Obstetric-Gynecologic Societies in Chicago, Illinois. New officers installed included Dr. Woodard D. Beacham, 1430 Tulane Avenue, New Orleans 13, Louisiana, as the new secretary. Dr. Ralph E. Campbell of Madison, Wisconsin, and Dr. Edward C. Hughes of Syracuse, New York, are the president and president-elect, respectively.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

Esophageal Atresia and Tracheo-Esophageal Fistula--William E. Ladd and Orvar Swenson, Harvard Medical School, Cambridge, and the Children's Hospital, Boston, Mass., Ann. Surg. 125:23-40, January 1947.

"Since 1938, 75 of 82 cases of esophageal atresia have been treated by the authors and their associates. In 32, primary anastomosis of the esophagus was performed with 18 deaths. In 43 the multiple stage operation was carried out with 27 deaths.

"If a newborn infant becomes cyanotic and shows an excess of saliva or frothy mucus in the mouth, the diagnosis of esophageal atresia should be considered. If subsequently, the infant vomits all fluids offered immediately after they are given, the diagnosis should be strongly suspected and steps taken to confirm or disprove the suspicion. First, a No. 8 or 10 F. soft rubber catheter should be introduced into the esophagus, preferably under the fluoroscope. If obstruction is met 10 or 12 cm. from the lips, the diagnosis is confirmed. The diagnosis may be refined by use of roentgen examination to differentiate between the different types of malformation.

"Twenty-five serious associated anomalies have been found in the last 82 cases. Eighteen of them either made it necessary to modify the treatment or caused the death of the baby.

"Obstetricians and pediatricians no longer advise parents of infants with esophageal atresia that nothing can be done. Alertness in making an early diagnosis can lead to successful treatment. Mortality rates in the future will depend to a large extent on the quick recognition of the condition and prompt transfer of the patient to a hospital equipped to care properly for the child.

"The preoperative preparation of these patients is important. They almost always have respiratory difficulties (pneumonia, or atelectasis) due to aspiration of saliva and mucus. The affected infant should be placed in an oxygen tent for the administration of oxygen in high concentration. Then a small soft rubber catheter is introduced into the pharynx and attached to constant suction. By this means, while keeping the infant in a slight Trendelenburg position, the air passage can be kept fairly clear and respiration made much easier. A small transfusion and parenteral fluids should be given as indicated, care being taken not to overtax the circulation and cause pulmonary edema. Chemotherapy is of great value. Such preoperative preparation will often improve the patient's condition sufficiently to make an operation successful which otherwise would certainly end in disaster.

"Primary anastomosis done via an approach through the right back is the operation of choice when feasible. The multiple stage operation should be employed only in those patients in whom the two ends of the esophageal segments are so far apart that they cannot be sewed together without tension, or in those patients who have serious associated anomalies or or who for some other reason are particularly bad risks."

COMMENT This report on esophageal atresia is certainly a most interesting one, and it brings out forcibly just what can be done in many of these cases that would otherwise die if they did not receive the proper attention. I think it deserves the serious consideration of all of our practitioners; therefore I take pleasure in giving it abstracted just as it is.

VETERANS HOSPITAL

This 67-year-old negro was admitted to the medical service on February 12, 1948, because of pains in the upper quadrant of the abdomen and jaundice. These pains were of six weeks' duration, came on at night, lasted several hours and sometimes radiated to the right lumbar region. No nausea or vomiting were present and the pains were not related to meals. There was no note of the time of onset of the jaundice. Bowels moved every other day, sometimes with the use of laxatives which was said to relieve the pain at times. The stools were light brown in color.

Physical examination on admission revealed a fairly well developed, poorly nourished negro. There was moderate jaundice. The liver was noted to be nodular, firm and palpable two to three fingers below the costal margin. The prostate was reported not abnormal. The heart did not seem enlarged. There were no abnormal heart sounds. Admission laboratory work revealed the Kahn negative; 12,000 WBC with 82 Polys, 18 lymphocytes, and 15.5 grams of hemoglobin. Sedimentation rate was 32 mm. The urine showed specific gravity of 1.015, 10 to 12 pus cells, some epithelial cells and much mucus.

During the second week of hospitalization the urine showed some RBC. The WBC had risen to 16,600; hemoglobin was reported 15 grams, with 4,300,000 RBC. NPN was 49.8; PSP (15-minute specimen only) was 2 per cent. Creatinine was 1.16. Icterus index had risen to 90 and prothrombin time had dropped to 28 seconds or 18 per cent. The cephalin Flocculation was reported four plus.

The patient was transferred to the surgical service on February 20, 1948, because of a right thrombophlebitis. At this time a firm, nodular, fixed mass was noted in the RUQ of the abdomen and deep jaundice was present. Thrombophlebitis was treated with sympathetic block and heat cradle, and subsided. GI series revealed displacement of the stomach anteriorly with narrowing of the first portion of the duodenum.

IVP revealed no function on the left and faint visualization of the pelvis and calices on the right which appeared distorted and displaced downward. The IVP revealed a persistent curvature of the lumbar spine with concavity to the left. The GU consultant was of the impression that a large soft mass could be palpated in the left lumbar region and reported a spider web configuration of the right pyelogram consistent with renal neoplasm.

Patient developed a left thrombophlebitis on March 4, 1948, which was again treated by sympathetic block and heat cradle, and subsided. At this time numerous small subcutaneous nodules present over the abdominal mass at the time of admission.

Surgical exploration was contemplated but the patient progressed rapidly downhill after the appearance of the subcutaneous nodules and expired on March 6, 1948.

BOOK REVIEWS

Christopher's **Minor Surgery** in its sixth edition continues to serve as an excellent handbook for the office surgery that most general practitioners undertake. This edition is brought up to date by addition of several topics and modernization of some material, including the use of antibiotics and sulfonamides, management of burns, varicose veins and pilonidal sinuses. The subject Thrombophlebitis and Phlebothrombosis is adequately handled in response to awakened interest in this field.

Some of the sources of the remarks in the chapter "The Female Genitourinary Organs" are dated. Graves' textbook was good in its day but the edition quoted was published nineteen years ago. The reviewer cannot concede that "the most frequent cause of (vaginal) discharge is a cervicitis, primary or secondary to salpingitis." The podophyllin treatment of the common condyloma acuminatum is mentioned in a cavalier manner while less effective methods are quoted at length from a thirteen-year-old note. The author finds the Schiller test worthy of one page in a volume of this title, but the Papanicolou smear is unmentioned.

—James Henry Ferguson, M. D.

†

The Acute Bacterial Diseases, Their Diagnosis and Treatment, by Dr. Harry F. Dowling, Clinical Professor of Medicine of George Washington University, is a book that every practitioner should have on his desk, It is published by the W. B. Saunders Publishing Company of Philadelphia and London. This book is intended as a practical guide for practitioners and students. In the beginning general factors in the diagnosis of infectious diseases are considered, then the acute infectious diseases are grouped together according to outstanding clinical features.

This book is concise and well written. It is an excellent guide for the practitioner in his daily practice. The price of six dollars and fifty cents is insignificant compared with the practical value of this book. There are 453 pages, generously illustrated.

State Board of Health

Felix J. Underwood, M. D.

CHILD GUIDANCE CENTER

by

Estelle A. Magiera, M. D., Director

With the appropriation of federal funds through the Mental Hygiene Act, the services of the child guidance clinic have been expanded. An additional psychiatric social worker and a psychologist have been employed, who will be located in Greenwood to serve the northern part of the state. This team holds clinics at Tupelo, Clarksdale, Greenville and Greenwood.

Tentative plans have been made to add a third team — psychologist and psychiatric social worker — which will be located at Hattiesburg and will serve the southern section of the state. A third psychologist has already been employed and will begin her work in September. This team will hold clinics at Hattiesburg, Laurel, Meridian· Gulfport, and Pascagoula.

A scholarship in psychiatric social work has been awarded to Miss Ernestine French of Water Valley. She began her work in the summer session at Tulane University and will finish in February. A scholarship in remedial reading and speech pathology has been awarded to Mrs. Elizabeth Jackson. She has registered for this specialized work at the University of Florida.

As it is impossible up-to-date to obtain the services of additional psychiatrists, the social workers in the northern and southern areas will be supervised closely by the psychiatrist in Jackson. These workers will make trips twice a month to Jackson to have consultation regarding the cases which they are carrying in treatment. It is hoped that by fall the services of a psychiatrist from Tulane University will be available for the southern area.

As the nature of this work is highly specialized and time consuming, the case load of necessity is limited. During the summer months an experiment will be initiated in what might be called group therapy in the prenatal and well baby clinics in some of the larger county health departments. Several of the county health departments have included lectures in the maternal and child health clinics. In the past however, only the psychiatrist feels that the pregnant mother should be prepared not only physiologically but also psychologically. Through this group therapy it is felt that a larger number of parents can be reached than could possibly be reached through individual psychiatric interviews. All of the members of the child guidance team will participate in this new project.

The child guidance staff continues to work in close cooperation with schools throughout the state. In several of the schools the principals are very conscious of the need for preparing the child for his first school experience. In Jackson during the month of May the principals invited all mothers of the first grade children to attend conferences. The psychologist has spoken to the group of mothers on the emotional status of children entering school for the first time. Similar conferences were held in Vicksburg. These proved so popular that the Board of Education is compiling and printing these lectures into pamphlets for distribution to the mothers.

The clinic staff sees many cases in consultation that are not carried in treatment. Many of these cases are referred by federal and state probation officers, local and state juvenile court judges, family service and welfare agencies. These agencies request psychological examinations and help in planning constructive programs for their charges. Since the Children's Code Commission and the demand by the courts for aid in child planning is a new development in the state, the psychologist made a special effort to be of service to these agencies. She also worked in the Council of Social Agencies and participated in the Division of Case Work.

The Mississippi 4-H Clubs used health as the general topic for their year's work and yearly publication. The section on mental hygiene for this booklet was written by the psychologist. Several county health educators held workshops during the school year. The psychologist was asked to help plan a course of study and to lecture to the teachers.

During the past year the personnel of the child guidance team has participated in the orientation courses for the externe clinicians. On April 12 a psychiatric institute for externe clinicians was held at the Tulane Medical School in New Orleans, conducted by two well known psychiatrists of New Orleans, Dr. John Bick and Dr. Theodore A. Watters. Dr. James Ferguson, Professor of Obstetrics at Tulane and Obstetric Consultant for the Mississippi State Board of Health, and Dr. Estelle A. Magiera, Director of the Child Guidance Center, participated in one of the sessions. Additional institutes are planned.

Tentative plans are being made for an in-service educational program for public health nurses. Members of the child guidance clinic will give a series of lectures to this group interpreting the basic mental hygiene concepts.

The many requests for books and pamphlets received from teachers and parents throughout the state prompted the setting up of small libraries at the mobile clinics to assist the child guidance program. During recent months a large number of books on child guidance and mental hygiene also had been added to the State Board of Health Library for the use of physicians and others throughout the state.

All members of the child guidance team serve on committees of the Council of Social Agencies Social Service Exchange.

The demands for child guidance service are so great that it is impossible to take care of the large number of referrals. At the time of this writing there were forty-four children on the waiting list of the Jackson Clinic alone. These children are seen in the order of referral—exceptions being made only in emergency cases which are taken as soon as possible. The Greenwood clinic which was established the latter part of March also has a waiting list of patients.

All members of the child guidance staff have participated in educational activities of professional and lay groups throughout the state. Speeches were made to the following groups: Public Affairs Y. W. C. A., Girl Reserves Y. W. C. A., Business Girls Club Y. W. C. A., State P. T. A., P. T. A. Power School, P. T. A. Whitfield School, Davis School Parents, Vicksburg Parents and Teachers, Millsaps Physical Ed Majors, Jackson College, Chi Omega Alumni Group, Galloway Mothers Club (Church), Brookhaven Mothers Club, Externe Clinicians.

COMMUNICABLE DISEASES IN MISSISSIPPI

	June 1948	June 1947	June Five Yr. Avg.
Poliomyelitis	6	0	8.4
Bacillary Dysentery	0	5	618.2
Diphtheria	10	17	17.4
Influenza	16	28	648.8
Measles	61	31	593.2
Meningococcus Meningitis	6	0	7.4
Other Forms Beningitis	2	.2	1.8
Pellagra	1	1	131.2
Pneumonia	40	52	359.6
Pulmonary Tuberculosis	188	181	183.4
Scarlet Fever	4	10	15.6
Smallpox	0	0	1.0
Tularemia	4	0	1.0
Typhoid Fever	8	9	10.4
Typhus Fever	4	4	10.8
Undulent Fever	4	15	9.4
Whooping Cough	20	56	673.6
	May	May	May Five
Poliomeyitis	1	2	3.8
Bacillary Dysentery	0	5	618.2
Diphtheria	17	21	21.2
Influenza	10	105	1055.6
Measles	122	94	1437.4
Meningococcus Meningitis	3	7	11.4
Other Forms Meningitis	22	2	1.8
Pellagara	1	1	131.2
Pneumonia	24	70	577.0
Pulmonary Tuberculosis	159	237	171.8
Scarlet Fever	4	10	15.6
Smallpox	0	0	.6
Tularemia		18	10.8
Typhoid Fever	5	5	6.6
Typhus Fever	3	2	6.4
Undulant Fever	9	13	7.0
Whooping Cough	8	78	648.2

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The Mississippi State Society of x-ray technicians will hold its semi-annual convention at the Buena Vista Hotel in Biloxi, Mississippi, on October 2, 1948.

All radiologists, technicians and non-registered technicians are urged to attend. Further information may be obtained by contacting Mr. A. H. Brown, Veterans Hospital, Biloxi, Mississippi.

To advocate the indiscriminate use of streptomycin, especially in moderately advanced cases of pulmonary tuberculosis, not only is premature but also carries with it certain dangers and drawbacks. Among the principal dangers in the use of this drug is its toxicity, which may seriously affect hearing, sight and kidney function and cause skin eruptions. At present, it can only be said that we have seen little in the treatment of well established pulmonary tuberculosis by streptomycin that gives cause for any great optimism regarding its curative value. Comm. on Tuberc., N. H. Med. Soc., New England J. Med., Oct. 23, 1947.

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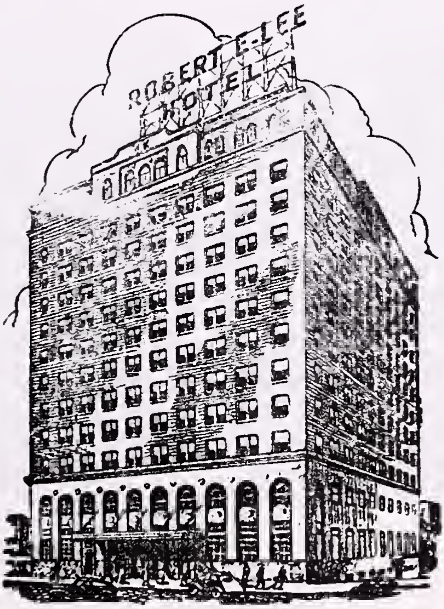

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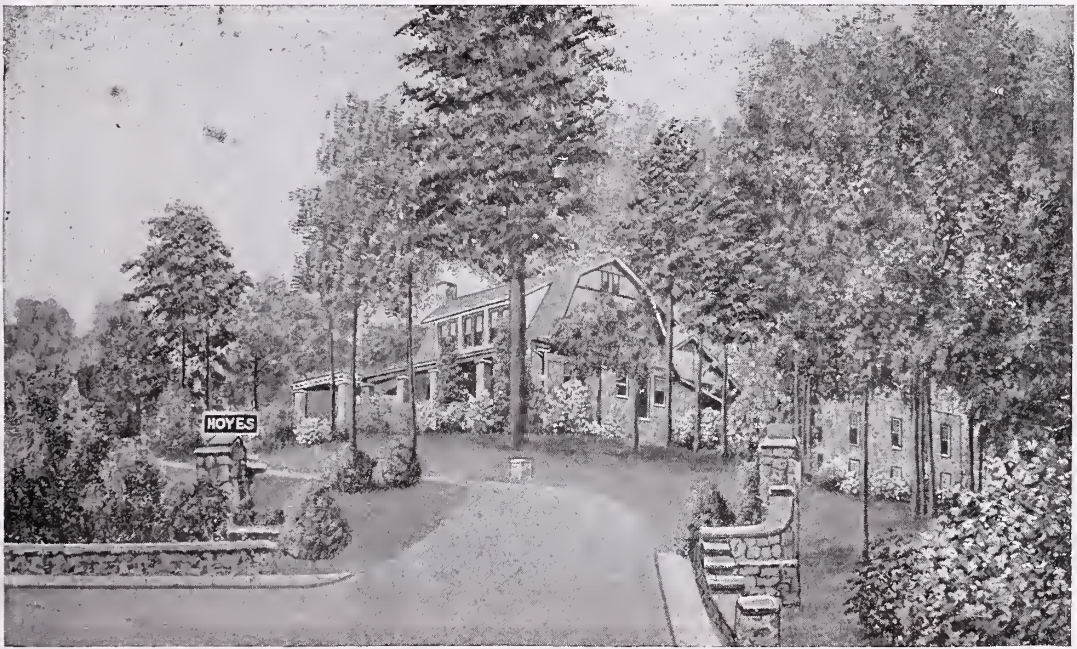

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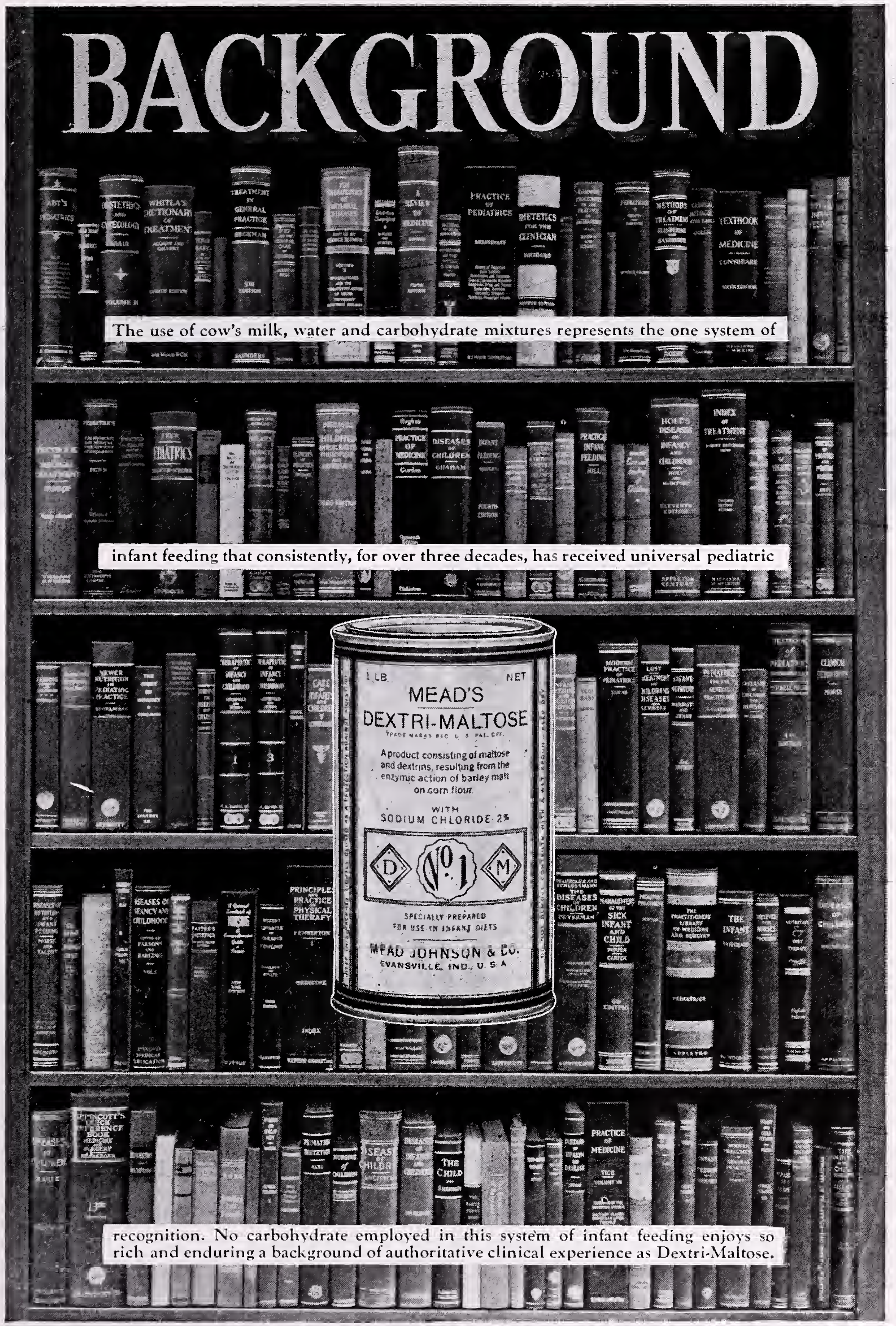
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...Give firm support to the low back; the support is easily intensified by re-inforcement with pliable steels or the Camp Spinal Brace.

...Afford a more stable pelvis to receive the superincumbent load.

...Allow freedom for contraction of abdominal muscles under the support in instances of increased lumbar curve (fig. 1).

...Are removed easily for prescribed exercises and other physical procedures prescribed by physiatrist or physician.

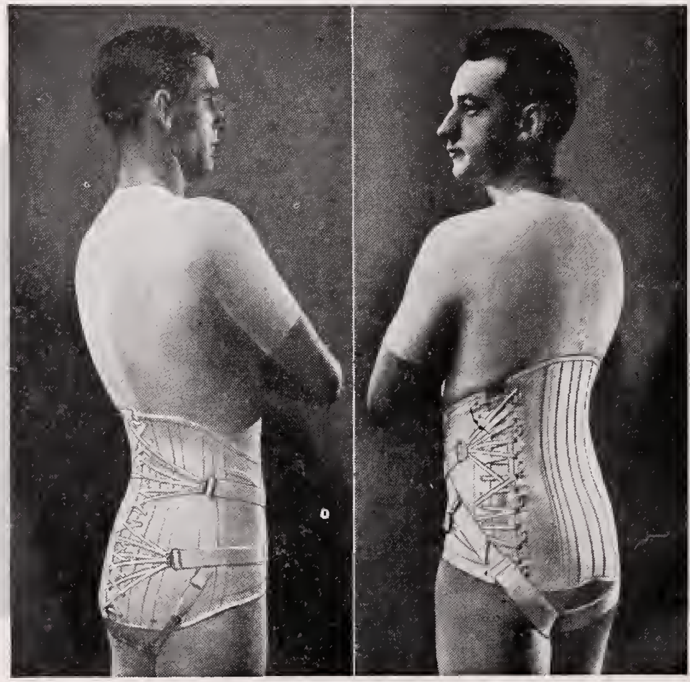

FIGURE 1 — Patient — thin type of build with beginning faulty body mechanics. The Camp adjustment provides a more stable pelvis, allowing patient to "draw in" the abdominal muscles thus gradually acquiring a gentle lumbar curve.

FIGURE 2 — Patient — intermediate type of build. Strain of lumbosacral joint predisposes to other strains. For protection of the joints in the lumbar region from recurrent strain and also as an aid in relieving the pain of acute conditions, Camp lumbosacral supports have proved effective.

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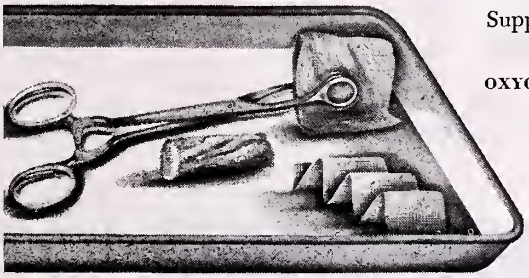

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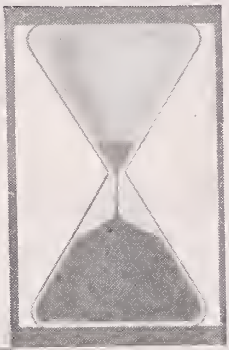

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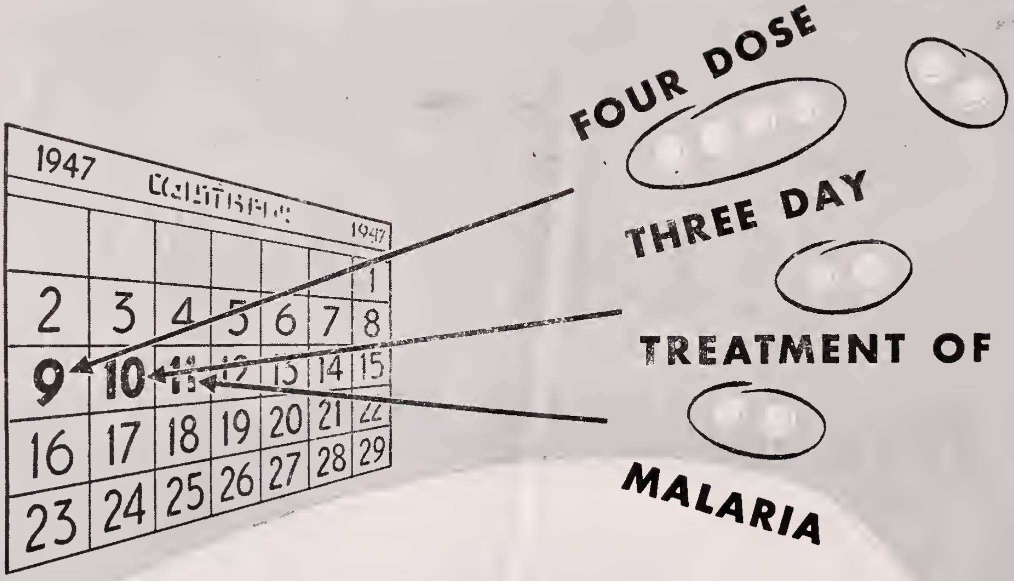

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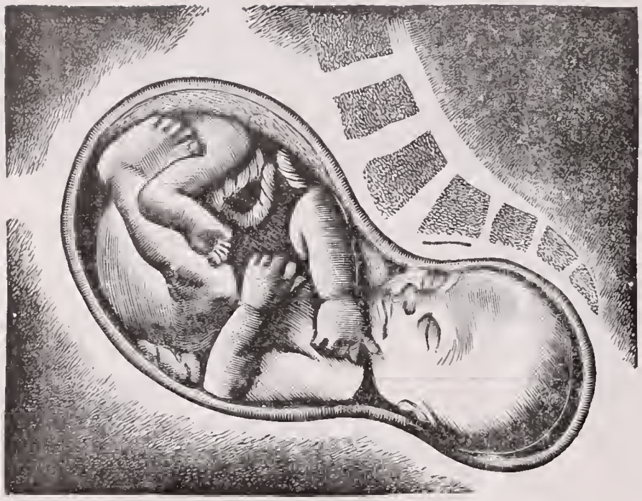

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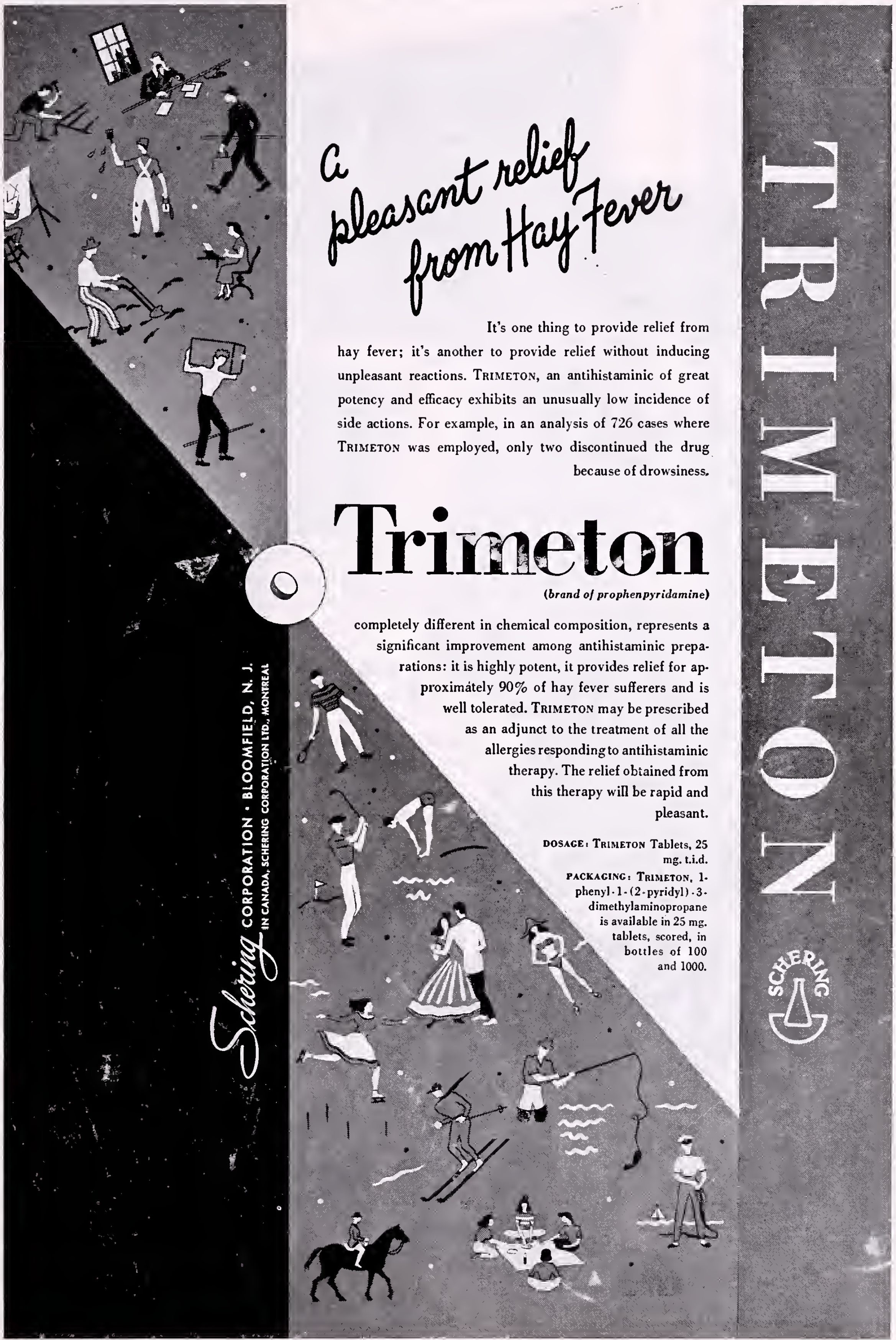

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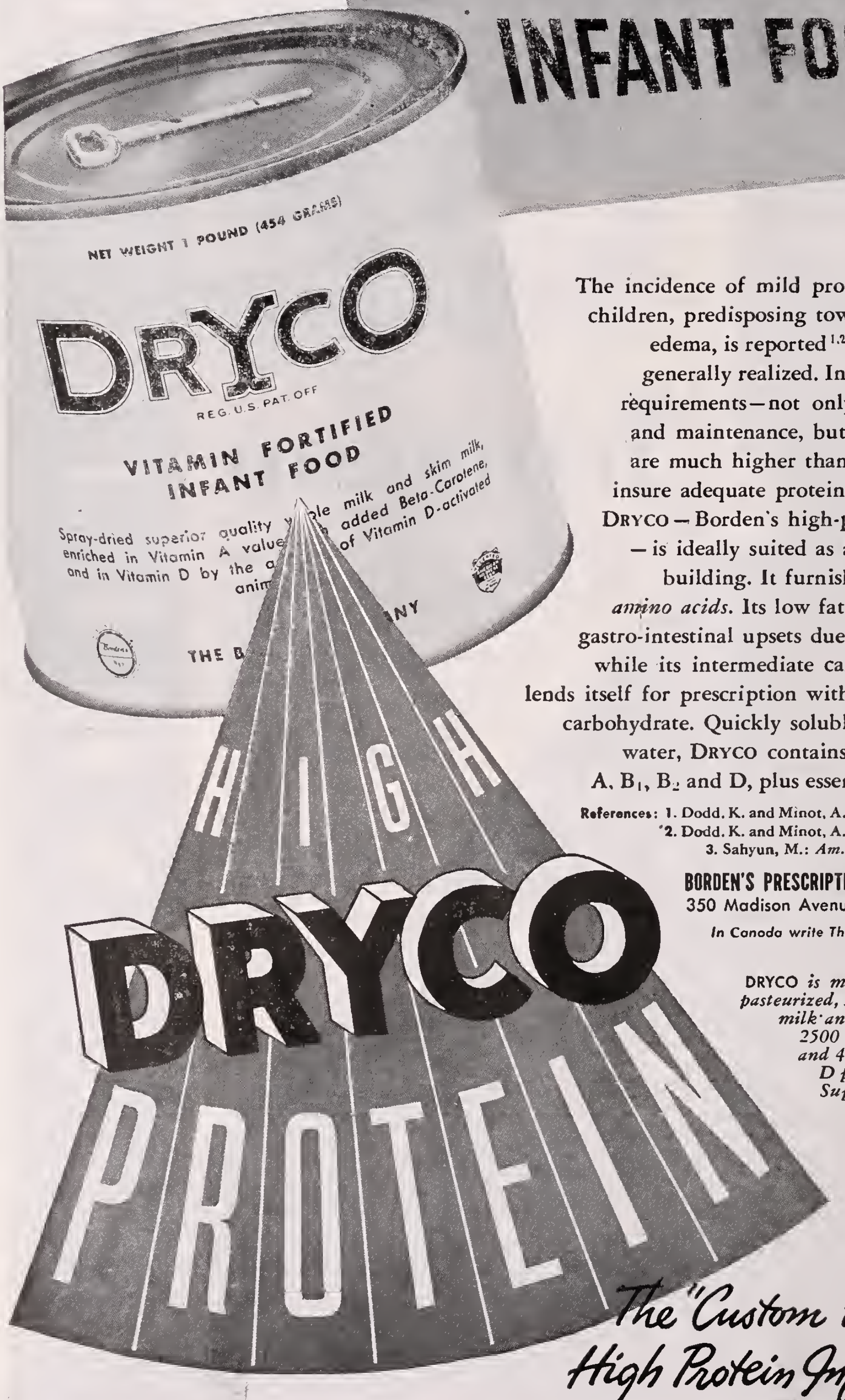
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References: 1. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:442, 1936.
2. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:452, 1936.
3. Sahyun, M.: *Am. J. Dig. Dis.*, 13:59, 1946.

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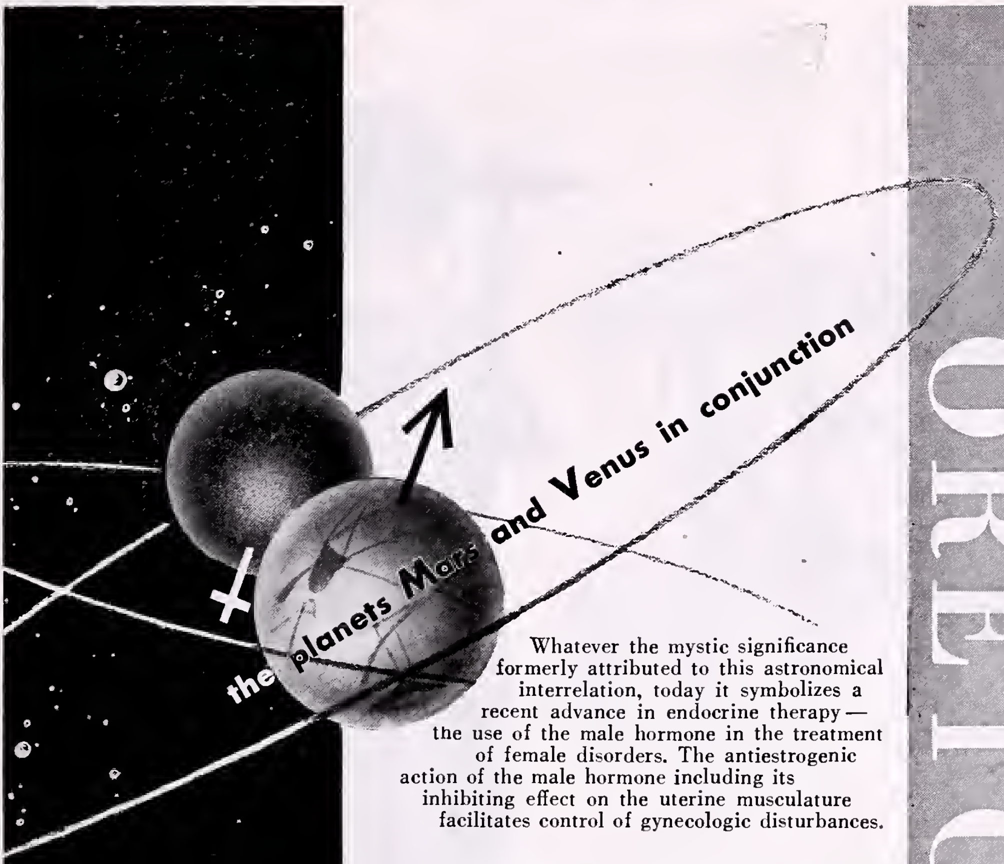
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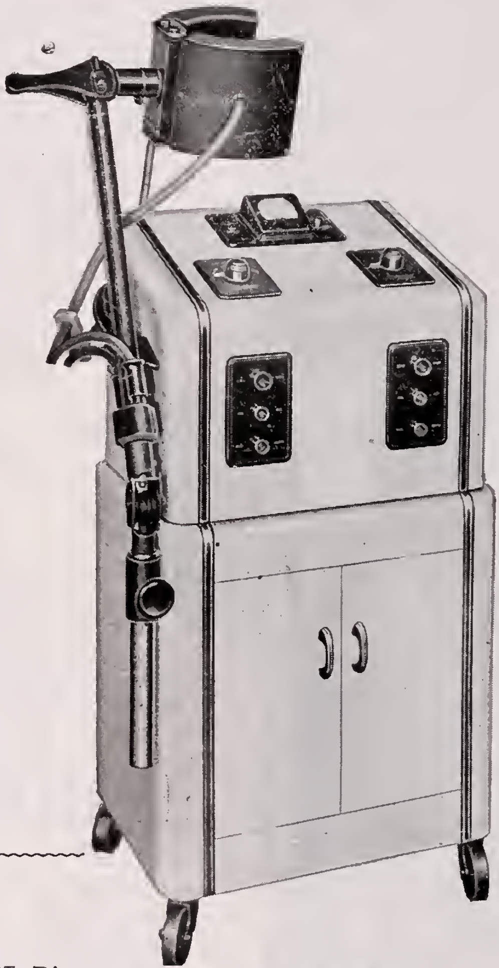

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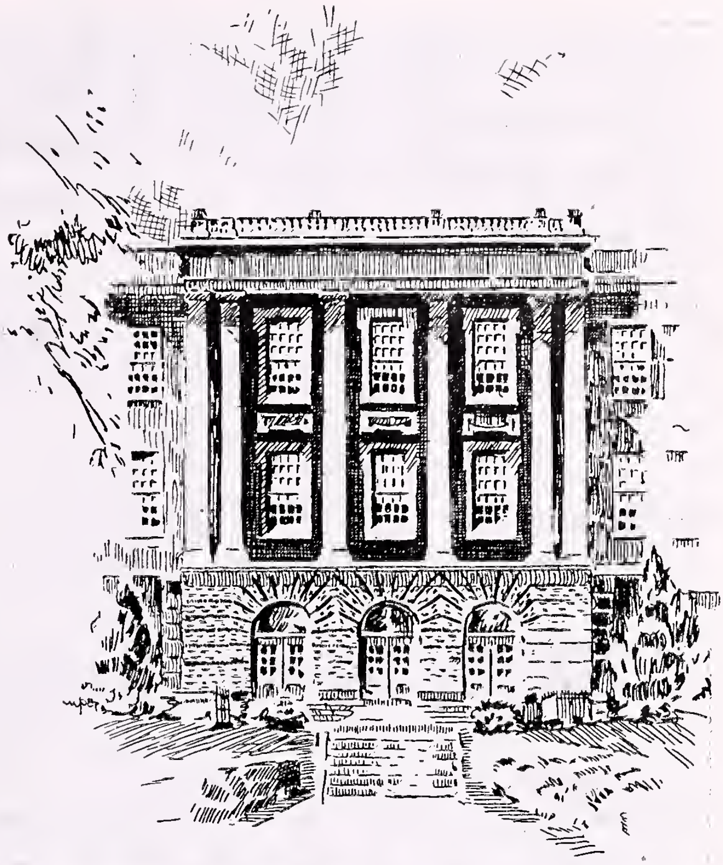

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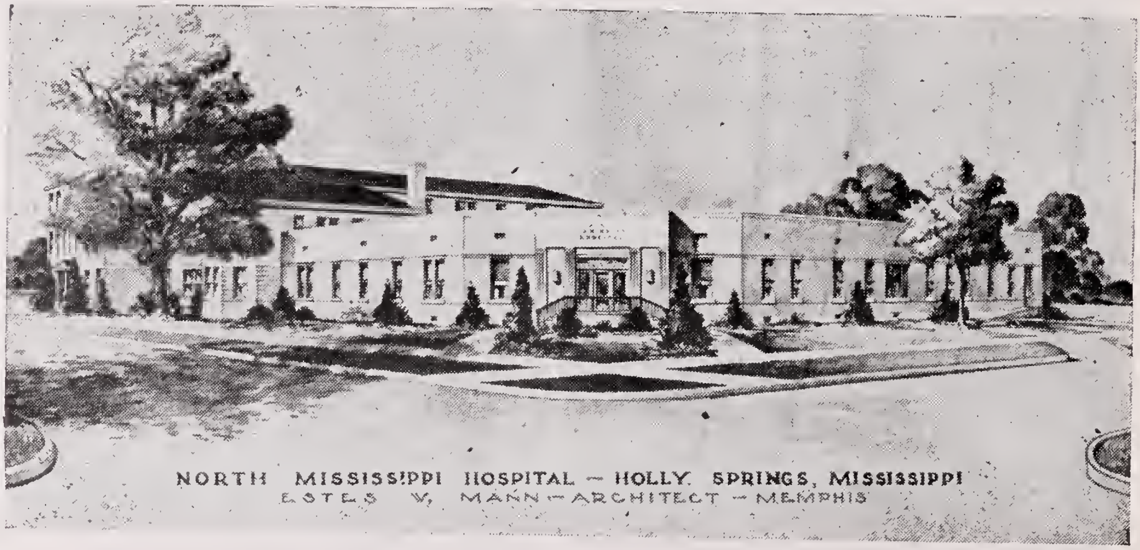
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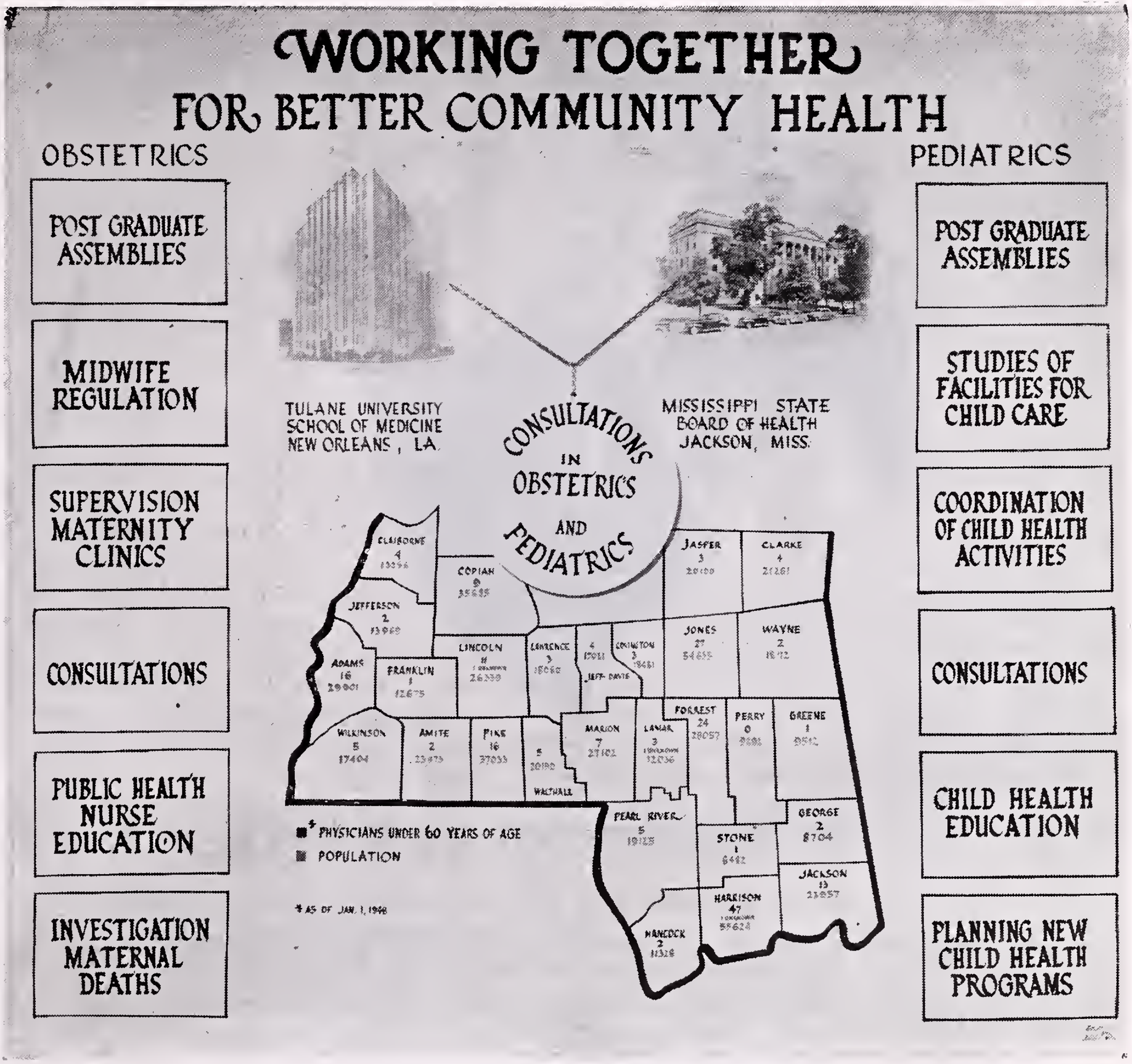

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■* PHYSICIANS UNDER 60 YEARS OF AGE

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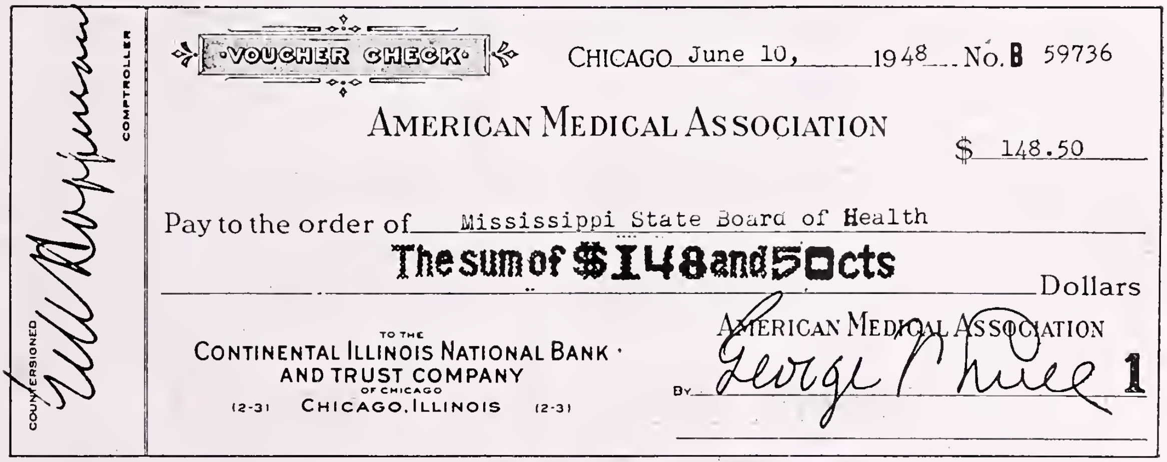

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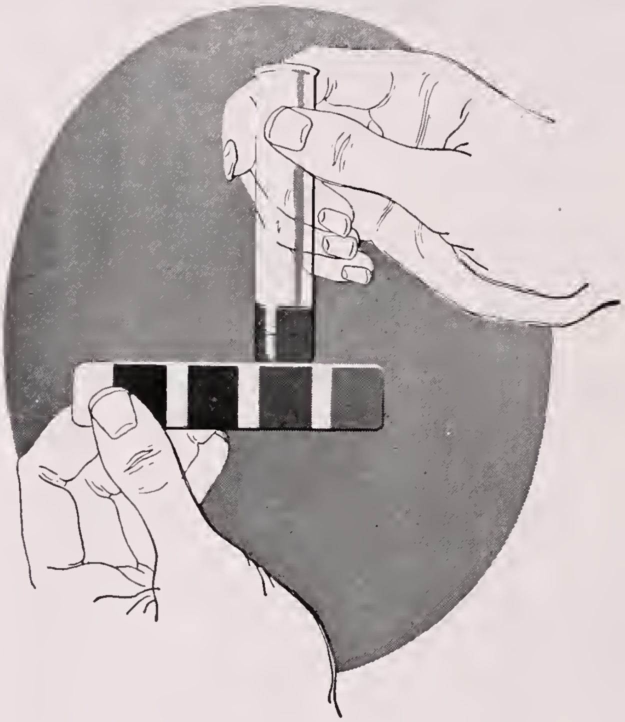
AMERICAN MEDICAL ASSOCIATION
By George P. Lull

COUNTERSIGNED COMPTROLLER

(See article on page 109)



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ELI LILLY AND COMPANY
INDIANAPOLIS 6, INDIANA, U. S. A.

The Evaluation of X-Ray Diagnosis in Ophthalmology, Rhinology and Otolaryngology*

D. H. Anthony, M. D., F. A. C. S., and D. F. Fisher, M. D.

Memphis, Tenn.

ROENTGEN RAYS were discovered in 1894, and two years later an ophthalmologist, named Clark, attempted the first practical application in a specialty, at whch time he attempted a crude localization of an intraocular foreign body. Since this time there is not a single branch of medicine that does not owe its rapid progress partially to X-ray; yet we are afraid that eye, ear, nose and throat specialists are not exploiting X-ray to its full advantage to obtain the best results. The clinician should also be aware of its benefits and limitations.

It is well at this time to stress just how very important it is to correlate the clinical findings with the X-ray findings. The radiologist must not be made to depend merely on a set of pictures without any indication as to what is expected, or what the patient's symptoms may be; and neither must the clinician be dependent on symptoms and clinical findings without the advantages of X-ray diagnosis. In far too many instances the use of X-ray is requested only in the most obscure, or most serious cases. In the past few years, with more requests for X-ray examination, the clinician is confronted with the realization that his results are so much improved, that X-ray has become indispensable to him. X-ray pictures are a permanent record and often give immediate and correct diagnosis, and afford a comparison for progress, or remission of the disease.

The Orbit

The orbital cavities are generally the same size on both sides. If a child has an eye removed early in life, after a few years, one can see that the orbital cavity is smaller on the postoperative side. Small orbits occur bilaterally in cases of anophthalmos.

Enlargement of the orbit is most frequently due to a large, longstanding, benign intraorbital tumor. This tumor may show increased density of the entire orbit, or absence of density, and if the tumor has been present long enough, and is large enough to cause increase in the size of the orbit, there is usually increased soft tissue density.

Fractures of the Orbit

X-ray is the most useful examination in distinguishing fractures of the orbit. Any injury around the orbit should be X-rayed, for swelling of soft tissue frequently prevents diagnosis of fracture of the orbit until the swelling disappears; and usually it is then too late to correct it by surgery, for an inflammatory process of the displaced bony rim of the orbit may be present. Usually fractures of the rim orbit are a direct result of a blow to the bone. Fractures of the floor of the orbit may be due to direct or indirect force. Pfeiffer has reported fracture of the floor of the orbit due to a direct blow on the eyeball resulting in a marked enophthalmos, without injury to the eyeball.

The Optic Foramen

Pictures of the optic foramen are very important in ophthalmological X-ray diagnosis, because when there is enlargement of the optic foramen on one side, there is likely to be a tumor of the optic nerve. One might see necrosis of the optic foramen, and that would be an indication of malignancy of the bone around the foramen. Fracture of the optic foramen is very rare, for the apex of the orbit is so well protected. However, it has been reported; and usually there is severe injury to the optic nerve, so if there is an injury of the orbit with loss of vision, optic foramen pictures should be made to see if a fracture is present.

The congenitally small optic foramen usually causes no trouble, unless the patient has posterior ethmoid sinus, or sphenoid sinus infection causing a swelling of the optic nerve. When this occurs, congenitally small foramen can cause an acute constriction, resulting in a retro-bulbar neuritis from partial strangulation of the circulation. This has been brought out clearly by White and McMillan. Unilateral smallness of the optic foramen occurs most frequently in children who have enucleation of the eye early in life. The correct picture of an optic foramen places it in the lower outer quadrant of the orbit.

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Superior Orbital Fissure

The superior orbital fissure opens into the middle cranial fossa and transmits the third, fourth and sixth nerves; three branches of the first division of the fifth nerve; ophthalmic vein; orbital branch of the middle meningeal artery; sympathetic fibers from the cavenorous plexus; the sympathetic root of ciliary ganglion; and sometimes the sensory root of the ciliary ganglion. These important structures make it necessary to have a diagnostic picture.

There have been only two good papers written on the superior orbital fissure. One by G. J. Baylin and H. D. Kerman; and one by the late Karl Kornblum and George R. Kennedy. This classification is given in the following five tables:

Classification of the Normal Sphenoidal Fissure on the Basis of Configuration, as Determined from a Study of 157 Anatomical Specimens: Karl Kornblum & George R. Kennedy

		Per cent
Normal fissure	63	40.12
Bulbous type	25	15.92
Long, narrow type	12	12.10
Dumbbell type	19	12.10
Cone-shaped type	17	10.82
Unequal fissures	14	8.91

Classification of the Normal Sphenoidal Fissure as Determined from a Study of 494 Roentgen Examinations of the Skull

Normal fissure	189	32.26
Bulbous type	72	14.57
Long, narrow type	58	11.74
Dumbbell type	46	9.31
Cone-shaped type	86	17.41
Unequal fissures	43	8.70

Analysis of the Cause of Poor Visualization of the Sphenoidal Fissures

Blurring due to motion	3
Improper position of head	12
Underexposure of film	6

Incidence of Various Roentgen Manifestations of Intracranial Tumor Occurring in a Series of 446 Verified Cases

Deformation of the sella turcica	64.6
Convolutional atrophy	8.8
Calcification of the tumor	6.5
Widening of the sutures	4.6
Local bone erosion	2.9
Local hyperostosis	1.8
Lateral shift of the pineal body	1.8
Widened diploic channels	0.2
Sphenoidal fissure deformity	27.9

A Recent Series of Verified Brain Tumors Showing the Occurrence of Sphenoidal Fissure Deformity in Relation to the Location of the Tumor. Also the Occurrence of Unilateral and Bilateral Involvement

Parasellar Tumors	12	8	7	1
Posterior fossa tumors	15	5	3	2
Frontal lobe tumors	13	4	3	1
Pituitary tumors	10	3	1	2
Intra-orbital tumors	2	2	2	0
Tumors of sphenoid sinus	2	2	1	1
Temporal lobe tumors	6	1	1	0
Parietal lobe tumors	8	1	0	1
Suprasellar tumors	3	0	0	0
Ventricular tumors	2	0	0	0
Occipital lobe tumors	2	0	0	0
	75	26	18	8

The superior orbital fissure is an easy picture to take and only shows correctly when a picture of the frontal sinus is made in the nose-forehead position. It is important that careful examination of the superior orbital fissures be made, in every case, where posterior orbital contents and the anterior brain might be involved.

Exophthalmos

The most useful X-ray diagnosis in ophthalmology is to try to determine the cause of exophthalmos, because the history, symptoms and examinations frequently fail to tell the ophthalmologist how long this space taking lesion of the orbit has existed, the location and type of lesion, and whether or not it may be a soft tissue tumor, or a bony tumor.

Bony tumors of the orbit, as a rule, can be outlined as to their location and size with X-ray, for there is enough increased density to make out the tumor. However, in most soft tissue tumors there is a density so low that the outlining of the tumor is nearly impossible in reference to the exact size and location; yet, some idea may be obtained. In some thick, soft tissue tumors, that have existed for a long time, there is a slightly increased density of the region where the soft tissue lesion occurs. Benign soft tissue tumors show in X-ray slightly better than malignant soft tissue-tumors.

Mucocele is the most deceptive X-ray diagnosis in exophthalmos. Instead of increased density occurring in the sinuses involved with mucocele, usually there is a decrease, because the pressure of the mucocele within the sinus causes some decalcification of the sinus walls. Therefore, a decrease of the density is misleading unless one realizes this, and is looking for it. It occurs more frequently in the frontal sinuses, next, the ethmoid sinuses, and last, the antrum sinuses. Of course, if there is a mucocele causing exophthalmos with a marked destruction in the roof of the orbit, the diagnosis may still be missed; but if the mucocele destroys the rim of the orbit, particularly the upper rim, nasal side, the diagnosis is made earlier. If the X-ray picture shows destruction of bone at the apex of the orbit, as the reason for widening at the superior orbital fissure, or the optic foramen, there is suspicion of malignancy until proved otherwise.

You will notice in the table by Pfeiffer, which follows, that the most frequent cause of exophthalmos is due to mucocele of the paranasal sinuses, and to one who has not looked this table up, it will be surprising.

	No. of Cases	Post Roentgenographic Findings	Indicative Roent. Findings	Suggestive Roent. Findings
Retension cyst arising in paranasal sinus (mucocele)	18	18	16	1
Pseudo tumor or granuloma of the orbit	16	2	0	1
Meningioma	14	14	12	2
Craniostenosis	14	14	14	0
Hyperthyroidism	12	1	0	0
Cavernous hemangioma	12	10	0	8
Oculomotor paralysis	9	0	0	0
Dermoids and epidermoids	8	7	4	4
Sarcoma, various types	8	7	0	2
Neurofibromatosis	7	7	7	0
Deformity or asymmetry of the orbit	7	7	5	2
Glioma of the optic nerve or chiasm	6	6	6	0
Arteriovenous aneurysm	6	4	3	1
Malignancy of paranasal sinuses	5	5	2	2
Mixed tumor of the lacrimal gland	5	2	0	2
Sacculated aneurysm of internal carotid artery	4	4	3	1
Abscess of the orbit	4	3	0	2
Ethmo-orbital osteoma	3	3	3	0
Paget's disease	3	3	3	0
Congenital coloboma cyst of eyeball or retinocele	3	2	0	0
Basal-Cell epithelioma	2	2	0	2
Neuroma	2	2	0	0
Myopia	2	1	0	1
Gumma	2	1	0	0
Xanthomatosis	2	2	2	0
Blood cyst of orbit	1	1	0	0
Myeloma	1	1	1	0
Trichinosis	1	0	0	0
Osteitis fibrosa cystica	1	1	1	0
Lipiodol in orbit	1	1	1	0
Subdural hematoma	1	1	1	0
Undiagnosed	20	7	0	3
	200	138	84	34

A. B. Reese has published excellent articles on exophthalmos and some of his tables are also listed, as follows.

Exophthalmos from Lesions Primary in the Orbit,
By A. B. Reese

Hemangioma (5 with no exophthalmos)		25
Pseudotumor (2 with no exophthalmos)		18
Meningioma		13
Dermoid and epidermoid cysts (6 with no exophthalmos)		10
Sarcoma—		
Lymphosarcoma	5	
Rhabdomyosarcoma	2	
Osteogenic sarcoma	1	
Fibrosarcoma	1	
Myosarcoma	1	10
Neurogenic tumors—		
Neurofibroma (4 with no exophthalmos)	8	
Glioma of optic nerve	1	
Neurilemmona (neurinoma, Schwannoma)	1	10
Mixed tumor of lacrimal gland		9
Lymphona		3
Hematoma		3
Osteoma		1
Xanthoma		1
Fibroma (from tendon sheath)		1
Osteitis fibrosa cystica		1
Lipoma (no exophthalmos)		1
Lymphiangioma (producible exophthalmos)		1
Zenker's waxy degeneration of rectus muscle		1
Tuberculous dacryoadenitis		1
Total		109

Exophthalmos from Lesions Adjacent to the Orbit

From newgrowths in nasopharynx		19
From newgrowths in sinuses—		
Antrum	12	
Ethmoids and/or sphenoids	3	
Ethmoids	2	17
From malignant melanoma of choroid—		
Extension from eye to orbit	2	
Recurrent after enucleation	5	7
Extension of epithelioma from lower lid into orbit—		
Basal cell (1 no exophthalmos)	3	
Squamous cell	1	4
Chloroma		1
From newgrowth of hard palate		1
From nose to orbit via tear sac		1
Metastatic carcinoma to uvea with orbital extension		1
Total		51

Exophthalmos From Systematic or Distal Lesions

From metastatic newgrowths—		
From breast (carcinoma)	3	
From suprarenal gland and/or retroperitoneal region (sympathicoblastoma, neuroblastoma)	2	
From thyroid (carcinoma)	1	
From lung (lymphosarcoma)	1	
From tonsil (carcinoma) to orbital bone	1	
From unknown site (carcinoma)	1	9
Hodgkin's disease:		
to lacrimal gland (no exophthalmos)	1	
to orbital bone (no exophthalmos)	1	2
Lymphatic leukemia		1
Schuller-Christian disease		1
Gumma		1
Total		14

Foreign Bodies of the Orbit

In the field of X-ray, as related to ophthalmic diagnosis, there is none so important or so satisfying as that of intraocular foreign body localization. There is no place which requires a closer correlation between clinical findings and X-ray findings. To anyone who has dealt with intraocular or intraorbital bodies, the importance of their exact location is obvious, as the treatment or surgical intervention is entirely dependent on the location of the foreign body. Magnetic or non-magnetic metal foreign bodies cannot be differentiated in an X-ray picture.

It is not the purpose of the authors to discuss the actual technique, but rather to discuss some pertinent points that should be kept in mind, and that might prove helpful in deciding on the procedure. When a patient gives a history of a recent injury caused by a flying piece of metal, glass, stone, wood, or any other material, there is usually not much difficulty in finding the wound of entrance, particularly if the entrance has been through the cornea. However, if the wound of entrance has been through the conjunctiva, there may be difficulty in determining whether or not the globe has been perforated. If there is some question as to the presence or absence of a foreign body, it is well to use the anterior-posterior (Caldwell) view. If a foreign body is demonstrated, then it becomes a matter of localization by one of the several methods.

The first satisfactory method of localizing intraocular foreign bodies was published by Sweet in 1898. Soon after that he devised a modification, which is very similar to the first, and is still used by some roentgenologists, but is not as popular as one might think. The reason for this is that there are so many chances of error, unless one has Sweet's complete localization equipment, is familiar with the method, and is frequently making localizations of foreign bodies in the eye. When properly done it is an excellent and very accurate method of localization. In our opinion it is not any more accurate than Pfeiffer's method, in which he uses the Comberg contact glass. Pfeiffer's method is simple, easy to calculate, and utilizes a very inexpensive apparatus. The only special apparatus necessary is a leaded Comberg contact lens, a protractor, a divider, and a millimeter rule. Only two exposures are required; one in the anterio-posterior (Caldwell) position, and the other a true lateral with the affected side close to the film.

Another simple and easy procedure, but not as accurate as Pfeiffer's is Yazujian's two rim gold localizer. The small rim fits the corneo-scleral junction, and the large rim circles the globe close to the eye. If the foreign body is 17 mm. posterior to the large rim of the localizer, the foreign body is usually behind the eyeball. Also, if the foreign body is outside the large rim radially, it is outside the eyeball. The senior author has modified this gold localizer by placing an extension on the temporal side. The outside surface of this extension is concave, so that the concavity of the wire fits in the external canthus of the eye. It keeps the localizer from rotating too far temporally while taking the picture, which it tends to do. This localizer is made in two sizes: one for a child and one for an adult.

In the so-called physiological location, or parallax, a picture is made in the anterior position and the lateral position. The patient looks up for half the exposure and down for the other half, on the same film. This is also performed looking to the left and right. If there is a difference in position of the foreign body in the two pictures, it is usually considered that the foreign body is intraocular. However, a foreign body could be just outside the sclera and the movement be the same as if in the posterior half of the globe. If it is exactly in the center of the eye, there is no movement in the two pictures. It is well to make these parallax pictures in all cases as a check after using the other methods first.

It has been advocated that injection of air, or oxygen, into Tenon's capsule gives an accurate localization, if the picture is made before and after injecting air. Displacement of the foreign body in the second picture is an indication that the foreign body is extraocular. If it is necessary to inject air into Tenon's capsule to get a satisfactory localization, one disadvantage is delaying the operation, because of slow absorption of air. Scheie and Hodes state that air in Tenon's capsule sometimes does not completely absorb for three or four days and there is danger of vitreous prolapse until the air is absorbed. It has been found that oxygen is more readily absorbed than air.

Bone free pictures (Vogt's method) may be used to demonstrate very small or low density foreign bodies in the anterior segment of the eyeball. An ordinary dental film held in a hemostat, is placed between the inner canthus and the nose. When pressed backward, pictures of the anterior one-fourth of the eyeball can be made with the patient looking up, down, and straight ahead.

Many an eye has been lost because of improper localization of the foreign body, and unnecessary manipulation and operative procedure attempting to extract it when the patient could have been spared an operation, and the eye saved had it been left alone. In contrast to this, many eyes have been lost because of slipshod methods of localization and the foreign body left inside the eyeball when it might have been removed. This condition is too serious for guesswork or inaccurate localization.

There are some other points that X-ray will give you in addition to the mere fact that the foreign body is, or is not, in the globe; e. g., size shape and position of the long axis; and less accurately, what the composition of the substance may be. The size of the foreign body may be calculated with considerable accuracy from the X-ray film, and the incision for removal of the foreign body will be made accordingly. The shape is less accurately determined, but usually some idea can be obtained. The direction of the long axis should be known, because the incision may be in the wrong direction through the sclera and the foreign body he wedged crosswise the incision.

In cases where there is doubt as to the composition of the foreign body, the authors have been accustomed to placing before the uninjured eye a number of materials, such as glass, stone, steel, concrete, copper, brass and aluminum for comparison. There is a great variation in the density of foreign bodies that might be in the eye, or orbit: e. g., bone specific gravity is 1.7 to 2.0 brick, 1.4 to 2.2; cement, 2.7 to 3.0; coal 1.4 to 1.8; emery, 4.0; glass, 2.4 to 2.8; marble, 2.6 to 2.8; slate, 2.6 to 3.3; wood, 0.42 to 0.68; alumiium, 2.70; calcium, 1.34; copper, 8.70; gold, 19.3; iodine, 4.940; slag, 2.0; platinum, 21.37; magnesium, 1.741; manganese, 7.42; mercury, 13.596; steel, 7.86; lead, 11.342; silver, 10.42; limestone, 2.68; ivory, 1.83; tungsten, 18.6; zinc, 7.04; flint glass, 5.04. We have found that bottle, lens, plate, window pane and automobile glass appear to have the same density on X-ray films.

If a patient has had a piece of steel in his eye for some time, his eye may show evidence of siderosis, and after many years a slow oxidizing of the piece of steel or copper may make the density so low that it would be impossible to show it in the X-ray picture. Such eyes have been X-rayed, after enucleation, and a foreign body of very low density found. Surely, all ophthalmic surgeons know the importance of complete and thorough localization before attempting to remove a foreign body from the eyeball; however, one must remember that an error in localizing might lead a competent surgeon in the wrong direction by opening an eyeball in search of foreign bodies that are not intraocular. This type error is occasionally the funeral of the eye.

Fractures of the Nose

Fractures of the nose are frequently associated with marked swelling of the soft tissues so that ordinary methods of examination may be entirely inadequate. X-rays should be made in all cases before there is any manipulation to the nose. One must determine which bones are displaced, or overriding. This is easily done by using the Water's anterior-posterior position, and the true lateral. It is even more important to have good pictures when there is a crushing type of injury with multiple fragments of the nasal bone. There should also be a follow-up picture to determine the result of reduction of the fracture.

Nasal Accessory Sinuses

Antrum: X-ray pictures should be taken to show the size and contents of the antrum. We advise that a picture be taken in the upright position to see if a fluid level is present. It is usually absolute proof of pus in the antrum. X-ray pictures should always be taken before injecting iodine oil into a sinus. The iodine oil may show a defect in the filling of the antrum and in that way one can estimate somewhat the thickness of the mucous membrane or tumor of the antrum. Another advantage in taking pictures of the sinuses is that when allergy is present the mucous membrane is thicker than usual and one can do a diagnostic antrum wash and if a little secretion is found in the antrum, this is an indication that an allergic background is causing the cloudy, thickened mucous membrane.

X-rays of the antrum frequently show positive diagnosis of a benign or malignant tumor, not otherwise detected. Benign tumors of the mucous membrane of the antrum are usually at the bottom. The upper part of the tumor, whether it is a polyp, or a cyst, or a hard tumor, is usually oval in shape. When a shadow is in the antrum, there is a permanent record of the size of the tumor and several months later another picture can be made to compare the progress.

Malignancy of the antrum usually affects the bone and there is a moth-eaten destruction of an antrum bony wall, quite different from smooth necrosis produced by pressure of a mucocele.

Frontal Sinuses: The frontal sinuses vary so greatly that an X-ray picture is indicated to determine the width and depth, as well as to determine the contents and thickening of the membrane. Again, the upright position should be used to determine if there is a fluid level. In an acute frontal sinusitis there is a possibility of osteomyelitis. If there have been symptoms only for a few days, do not depend on X-ray for positive findings for they will not show early. It is better to depend on the swelling than the X-ray pictures in very early cases of osteomyelitis. In cases of acute frontal sinus infection, with the picture showing early involvement with, or without a fluid level, associated with clinical findings, it is well to take one picture daily to estimate whether the patient is getting better or worse. The picture is made every day with the same timing, exposure, and developing. This daily film serial is very valuable when one is worried and trying to decide whether or not to do a trephining operation of the frontal sinus. After several days or weeks, X-ray of the frontal bone may show the beginning of osteomyelitis. X-ray findings at this stage are what we call late findings in the diagnosis of osteomyelitis.

Ethmoid Sinuses: The reasons for making pictures of the ethmoid cells are to see if they are cloudy, but more important, the size, number and location than any other sinus. Of course, one cannot expect to see a fluid level in the ethmoid cells, for there are so many partitions in the ethmoid sinus that, even when present, it would not be detected in the X-ray picture.

Sphenoid Sinuses: In X-ray pictures of the sphenoid sinuses it is again important to know the size and shape, for usually one sphenoid sinus is larger than the other and its depth and width should be known, particularly if you are going to operate on it. In the sphenoid it is rare to see a fluid level, but it is possible in a very good picture of a large sphenoid. The sphenoids should be X-rayed both laterally and anterior-posteriorly to get the most information.

Diagnostic pictures of the sinuses are essential if the rhinologist is planning to operate on them, either intranasally or externally, for he can learn something from the pictures that is impossible to get from any other type of examination.

Fractures of the Facial Bones

Fractures of the facial bones usually involve the sinuses. To first make a diagnosis of the fractures of the face, take pictures of all the sinuses and then any additional positions that you think necessary, including the zygomatic arch and mandible. These pictures are not difficult to take, but may have to be made in more than one position. Post-injury swelling interferes with the usual examination as it does in fracture of the nasal bone. No surgeon should attempt to give his opinion of fractures of the face without a complete set of X-ray pictures of this region. If he tries to operate, he will certainly be at a great disadvantage without a good set of films present to decide on the method of approach for reduction of the displaced bones.

Shea states: "A study of the normal orbit in the routine posterior-anterior sinus film will show a line in the outer third made by the junction of the outer orbital wall and the skull. This line bears a constant relationship to the outer rim of the orbit and may be used to determine whether or not the malar bone has been displaced. The transverse diameter of the orbit is altered in these fractures, being increased in case of outward displacement and decreased in crushing injuries in which the malar is rotated inwardly. This relationship and diameter are controls available for use in determining the resetting of the fractures."

Lacrimal Sac

X-rays of the lacrimal sac are primarily made to determine the size and shape of chronic mucocele of the lacrimal sac. The shape of the sac is important, for it may have been injured from spontaneous rupture, after an acute exacerbation of a chronic sac or it may have been injured from an external opening. There may be an hour-glass-shaped sac, and if this occurs, it would be helpful in a dacryocystorhinostomy to make a larger nasal mucous membrane exposure to take care of this partially contracted sac. Also, if there is a very small sac, one would want to make a larger bony opening to get more mucous membrane of the nose to anastomose to the sac. A picture of the lacrimal sac is of no help, unless it is injected with some iodine oil. Of greatest importance is a diagnosis of obstruction of the common canaliculus, for in this condition injecting iodine oil into the canaliculus above and below does not show in the sac, and one naturally concludes that the common canaliculus is completely obstructed, which is a contraindication to surgery. Iodine oil injected into a normal lacrimal tract is poorly visualized on an X-ray film.

Acoustic Neuroma

The best X-ray diagnosis findings for eighth nerve tumor in the advanced stage are demonstrated in pictures made of the apex of the petrous portion of the temporal bone. This tumor frequently causes a pressure necrosis of the internal auditory canal, or the internal auditory meatus. Best positions for X-ray pictures are Stenver's, Chamberlin-Towne, vertico-submental (Taylor's), Bowen-Hirtz, and the petrous portion of the temporal bone which shows through the middle of the orbit in the anterior-posterior position. These positions should all be used, because each position shows a different side of the petrous portion of the temporal bone.

Mastoiditis

Diagnostic X-rays of acute mastoiditis are essential and should be made as early as there is any question of involvement. In the presence of infection in the middle ear with patient worse, or no better, at the end of one week or more, making a second, third, or more pictures is very helpful in trying to decide whether to wait or to operate and drain the mastoid. If the patient has had an acute mastoid for some weeks, X-ray pictures are essential, for they demonstrate not only the general cloudiness, but the size and location of the cells; and last, but not least, whether or not there is cavitation present.

In chronic mastoiditis an X-ray picture frequently determines if the patient should have a semi-radical or radical operation. The choice of operation depends not only on the symptoms, objective findings, and character of the secretion, but on the amount of bony involvement or cavitation. In the X-ray diagnosis picture look for the size of the mastoid compared with the size of the un-infected mastoid on the other side; if there are any cells left; estimate how much new bone formation; if there is a small or large cavitation in the region of the antrum; the location and size of the bony shadows of the lateral sinus. These pictures should be made in the usual Law position and the anterior-posterior position. Always have a picture made of the petrous portion of the temporal bone, so if the petrous is involved at present, or later, there is a diagnostic comparison.

Petrositis

This is only important as an adjunct to diagnosis. Unfortunately, X-ray pictures cannot be relied on consistently. If they are positive, they can be of great significance, but if negative, do not necessarily rule out pathology. The most useful positions are: first, vertico-submental; second, Towne's position; third, the petrous portion of the temporal bone, which shows through the middle of the orbit in the anterior-posterior position; fourth, Stenver's position; fifth, Bowen-Hirtz position. You cannot rely singly on any one of these positions, for each shows a different part or different side of the petrous position of the temporal bone. All five positions, or any other you might care to use, should be made in each case with symptoms of petrositis.

The Salivary Glands and Their Ducts

Any patient with symptoms of the salivary glands and their ducts should have complete X-ray pictures of the salivary glands and their ducts to determine the presence of calculus in the gland or in the duct. The submaxillary gland or Wharton's duct, is more frequently involved with calculi; next, Stensen's duct and the parotid gland; and last, the sublingual ducts and glands. Calculi in the ducts are usually oblong in shape. Calculi in the gland are usually round. Most calculi in the ducts or glands will show in one of the various positions. It has been estimated that salivary calculi contain from 66 to 72 per cent calcium phosphate and carbonate; however, there are some small calculi containing very low amounts of calcium that do not show with X-rays. It is infrequent for calculi not to show in X-ray pictures, if they are causing symptoms. Diagnostic X-rays of the anterior two-thirds of

Wharton's duct can be made bone-free with an occlusal film, size 2x3 inches in the mouth and with the X-ray tube under the chin. The posterior third must be made in the lateral position (extreme jaw position).

The submaxillary gland films are made laterally in a position called the extreme jaw position. Another position, for submaxillary glands, is the same as in a picture for the right and left sphenoids, in the vertico-submental position. This view was accidentally found by the senior author and has never been described in textbooks for submaxillary gland positions. It is an excellent position when looking for calcium in the submaxillary gland and, whenever sinus pictures are made, one can always look in that region and check up on the submaxillary glands even though the patient does not have any symptoms. X-ray diagnosis of the salivary glands is very important, for if you miss a salivary calculus and try to treat the patient symptomatically, he may never get relief as long as the calcium remains in the duct or gland. Salivary pictures are so satisfactory that the otolaryngologist cannot afford to treat the patient for any length of time without a set of pictures.

The sublingual gland and duct pictures are made with an occlusal film, exactly described for Wharton's duct. The parotid gland is made in a true lateral position. X-ray of Stensen's duct is made with the mouth wide open in true lateral position attempting to get the teeth and jaws out of the picture. To pass a probe into Wharton's duct and Stensen's duct is a very easy and satisfactory office procedure and a picture made with the probe in the duct frequently is of very great diagnostic value. Injecting oil into Stensen's and Wharton's ducts is easily done, and the diagnostic pictures should be made immediately after the injection. This is preferably performed in the same room where the X-rays are to be made, so there will be very little loss of time between the injection and the picture. Every minute some of the oil is excreted. However, in some glands and ducts, parts of the oil remain for several days or for a few weeks. Injection of iodine oil should not be used for diagnosis in acute infections of the salivary glands.

In diagnostic pictures of Wharton's or Stensen's ducts look particularly for constriction of dilatation of the duct. In the glands look for defect or filling. In chronic infection of the salivary glands after injection look for dilatation of the small glandular ducts and multiple cavitations. The picture in these cavitations looks as if the gland has been sprinkled with bird shot, for the iodine oil is scattered through the affected part of the gland and is positively diagnostic. In the glands, particularly the submaxillary, one is occasionally able to see that the gland is spotted with accumulations of calcium.

The Throat

X-ray diagnostic aid for the throat is helpful in demonstrating retropharyngeal abscesses and foreign bodies of the throat. It is much less important in other conditions of the throat. Occasionally there is partial ossification of the thyroid cartilage. It is also beneficial to watch the action of the muscles of deglutition while a bolus is swallowed.

Diverticulum, stricture and cardio-spasm of the esophagus have been so well described in literature that it is only necessary to mention them in this article, for the diagnosis cannot be proved by any method other than X-ray and use of the opaque fluid.

Pituitary Tumor

Usually a pituitary tumor, giving a patient enough symptoms to cause him to consult an oculist, can be found with X-ray, and a positive diagnosis made showing erosion of the posterior clinoid process and sharpening of the anterior clinoid process. The patient does not come to the office on account of headache, or other symptoms of advanced pituitary tumor; he comes because of visual loss. Any patient with a temporal hemianopsia, unilateral or bilateral, and with or without optic atrophy, should have a diagnostic X-ray picture made of the sella turcica at once. The picture is very easy to make; easy to interpret; and one of the most positive diagnostic aids in ophthalmology.

Erosion of the clinoid processes may be due to extra-sellar tumor or intra-sellar tumor. Usually one does not get early X-ray of these pituitary tumors, but if so, there is a decided enlargement of the sella turcica before the posterior clinoid process is completely destroyed. Pictures of the sella turcica are so necessary that the ophthalmologist cannot afford to omit this diagnostic aid if there is any question of pituitary gland involvement.

Summary

Diagnostic aid from X-ray pictures warrants a more generalized use in eye, ear, nose, and throat examinations.

After a patient has been X-rayed he is more satisfied with the physician's advice. A physician can treat his patient much more comprehensively and with more assurance that the diagnosis is correct.

It is much safer to do sinus surgery with X-ray pictures present.

Pictures at intervals are the best way to determine the progress of some diseases.

An X-ray is taken for anatomical as well as pathological diagnosis.

Solid substances or elements of very low density are never magnetic. High density substances or elements may be magnetic or non-magnetic. The very high density substances or elements are non-magnetic—gold, copper, lead, brass, platinum, silver. Therefore, one cannot always differentiate between magnetic and non-magnetic foreign bodies or the orbit by X-ray pictures.

It is most important for the clinician and the radiologist to pool their information and observations on each case.

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DISCUSSION

DR. PHILIP MERIWETHER LEWIS: This paper by Drs. Anthony and Fisher is, in my opinion, a most excellent one. They have listed the uses of X-ray in the diagnosis of the various conditions in our field of work and stressed the great importance of routinely X-raying certain types of cases. They have wisely refrained from giving us the technical details which they employ in obtaining their splendid pictures.

In my practice X-ray studies have been particularly helpful in exophthalmos and in foreign bodies of the eyeball or of the orbit. Certainly one of the exceedingly difficult problems in ophthalmology may be the determination of the cause of unilateral exophthalmus. Often skillfully made X-rays furnish the information by which we can decide; first, whether or not the case is one for surgery, and second, the method of approach and by whom, ophthalmologist or neurosurgeon.

In penetrating foreign bodies X-ray studies have been considered essential. By proper technique it is almost always possible to ascertain whether the foreign body is lodged in the eyeball, or whether it has passed through into the orbit. This is obviously of great importance. The almost exact localization of a foreign body within the globe is of the greatest aid in determining the method of approach for removal of the foreign body with the least possible visual damage. The use of the Berman localizer, while a helpful adjunct in intraocular foreign body surgery does not obviate the necessity of careful X-ray localization.

It is interesting to note that the authors have found the density of glass to be greater than that of several of the lighter metals and even greater than ivory which we have always considered very hard. Until enlightened on this matter a few years ago by Dr. Anthony, it had been my impression that glass was not demonstrable in an eye by X-ray, unless the glass contained considerable lead.

In closing I wish to say that it is most comforting to have in our midst a colleague like Dr. Anthony who understands our problems and who is interested in, willing to, and extremely capable of giving us X-ray assistance when needed.

DR. RALPH O. RYCHENER: Dr. Anthony in his usual fashion has given us a complete and comprehensive exposition on X-ray as related to ophthalmology and otolaryngology which ranks as source material with his equally fine paper on Salivary Calculi presented before this Academy some years ago. Anyone interested in any phase of the subject will find his bibliography invaluable, for when he decided to interest himself in X-ray in this specialty he read every publication on the subject which was available in this country and has a most astounding collection of reprint material. In similar fashion he experimented with time and depth exposures on patients as well as every possible type of foreign body so that he not only produces as beautiful X-ray plates as can be found in this country but also determines the type of foreign body with which we are dealing. Some of these days I fully expect him to tell from the X-ray alone whether or not the foreign bodies are magnetic. (Laughter.)

In unilateral exophthalmos x-ray of the orbit is essential as here even negative information is valuable. If sinus disease, bony and soft tumors of the orbit can be ruled out, one's thought must then be directed to the syndrome which so often is associated only with bilateral exophthalmos; namely, hyperthyroidism. This is a common disease and unilateral exophthalmos is often the very first sign. A case of unilateral exophthalmos due to osteoma of the nasal apex of the orbit illustrates the author's remarks about the diameters of the optic foramina and sphenoid figures. This boy (photographs) had ptosis and increasing exophthalmos of the right eye due to this body growth involving the sphenoid just anterior to the chiasm, causing compression of both the optic foramen and sphenoidal fissure on that side, which may be compared with the normals of the left. Optic atrophy, ptosis and other extra-ocular motor paralyses and paresis were concomitant. Neurosurgery through the supraorbital route resulted in some relief of the exophthalmos and the ptosis was corrected by a Guyton operation. Our files contain numerous other case histories in which the author's x-rays have been most helpful. One of the unusual ones is this young girl (photograph) whose exophthalmos of the right eye was due to Schuller-Christian disease, where lipoid pools formed in the bones of the orbit.

My interest in affections of the lacrimal sac has led to the examination of numerous patients for visualization of the lacrimal sac and duct by the injection of iodized oil. This lad of six (photograph) had an acute dacryocystitis superimposed on a neglected congenital stenosis. X-ray showed the sac could be dilated with iodochlorol injected through the canaliculus and hence the condition could be cured by dacryorhinostomy. This man of 40 (photograph) had been subjected to repeated barbaric probings with huge probes without lasting results. No mucocele was present but lopoidol demonstrated a lacrimal tube-like duct which could be utilized for dacryorhinostomy and resulted in complete cure. It is very comforting to have had such valuable aid so close at hand.

DR. SAM H. SANDERS: Drs. Anthony and Fisher's excellent paper has enumerated many conditions in which x-ray can be used to advantage. There are many more advantages that time prevents mentioning. For instance, in cases with nasal symptoms alone there are many advantages to be gained in the use of x-ray. X-ray is an aid in diagnosis, prognosis, and treatment.

In diagnosis, because of the lack of consistency of clinical symptoms and findings in sinusitis.

One patient with an antral infection may have a headache, another will not. One may complain of a frontal headache, and another of pain in the cheek or a sensaation of fullness in his cheek. An x-ray will not only show a density in the involved sinus, but will often show the type of pathology present.

Sinuses that are infected are more dense than sinuses in which the mucous membrane is changed by an allergic reaction. Most true allergic changes are reversible and can return to normal. The mucous membrane of a sinus that is uniformly thickened from the bone to the surface and does not produce much of a shadow is usually allergy. The acutely infected antrum in the early stage may show a uniform thickening but it will cast more of a shadow than one due to allergy and less dense than one filled with pus. A sinus membrane that shows a marked density near the bone and gradually shades off usually is a chronic infection of long standing, or past the stage of repair. One can predict that in the majority of cases this antrum is not going to respond to treatment or irrigation.

One often sees a patient that gives a history of having had sinus trouble all of his life and the x-ray does not show any pathological density in the sinuses. This makes me suspicious of an allergy because if the patient had had sinus trouble for years, there would have been some definite thickening of the sinus membranes.

Sinus plates are often made too dense. Heavy exposure makes pretty pictures but the tissue detail is absent. The rhinologist has an advantage over the radiologist because he can see the picture, then the pathology in the sinus and can go back to the x-ray after studying the membrane and see exactly what types of membrane produce certain changes. Much can be learned if this procedure is followed. The otolaryngologists should be capable of interpreting the x-ray plates as well as the radiologist.

I do not think any one can determine the type of pathology present, treatment indicated, or give an accurate prognosis in sinus condition without the aid of the X-ray.

ACKNOWLEDGEMENT

The authors would like to take this opportunity to express special appreciation to Dr. E. P. Pendergrass of Philadelphia, Pennsylvania. The textbook by Pancost, Pendergrass and Schaeffer has been a valuable guide in X-ray of the salivary gland and his personal communications have been invaluable. Miss Harriet Wilson, package librarian of the A. M. A., has devoted a great deal of time in searching for and loaning us literature, for which we are duly indebted. Also, thanks to Miss Jean Robinson and Mrs. B. F. Woodford of the Memphis Optical Dispensary for their assistance in making Kodachrome slides which we have found very useful in presenting this subject for postgraduate instruction and before general medical societies.

1718 Exchange Building

FULL PROFESSORS

Dr. George Allen Bennett has been appointed to the professorship in anatomy at the Jefferson Medical College. He is also director of the Daniel Baugh Institute of Anatomy. Dr. Bennett was born in Water Valley, Mississippi, and received much of his early education here.

Dr. Joseph O. Crider, who is a native of Mississippi, has been promoted to full professorship in physiology at this institution. He was associated with the University of Mississippi, School of Medicine, for about seventeen years, serving as assistant dean and dean. He was appointed assistant dean of the Jefferson Medical College in 1930, and he will continue in this capacity along with his new appointment.

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ANNUAL MEETING
OF THE
SOUTHERN
MEDICAL
ASSOCIATION
OCT. 25-28, 1948

at
Miami, Florida

AN INSPIRING MEDICAL MEETING—the Annual Meeting of the Southern Medical Association in Miami, Florida, October 25-28. In the general clinical sessions by Miami physicians and surgeons, the twenty-one sections and the scientific and technical exhibits, every phase of medicine and surgery will be covered—the last word in modern, practical, scientific medicine and surgery. Addresses and papers by distinguished clinicians not only from the South, but from many parts of the United States.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Miami a scientific program and recreational facilities to challenge his every interest and make it worth-while for him to attend.

ALL MEMBERS of state and county medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South should be and can be members of the Southern Medical Association. The annual dues of $5.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

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Bronchiogenic Carcinoma*

ALTON OCHSNER, M. D., MICHAEL E. DeBAKEY, M. D.
and IRVIN M. RICHMAN, M. D.

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The incidence of bronchiogenic carcinoma is increasing and has been for the past two decades. The reason for this is not known, but it is thought that the increased incidence of smoking with its consequent irritation of the tracheobronchial mucosa may be responsible. Undoubtedly, there are many more cases of bronchiogenic carcinoma being diagnosed now, because the possibility of its being present is thought of more frequently.

The disease in primarily one of the male sex. In the 195 cases operated upon by the authors, 166 (85.1 per cent) were in man and 29 (14.18 per cent were in women. It is also a disease primarily of the white race. In this same series of cases, 186 (95.3 per cent) were in the white race and nine (4.7 per cent) were in colored race. As in carcinoma elsewhere, it is a disease primarily of advancing age. Of the 195 cases, only seventeen (8.6 per cent) were less than forty years of age, the greatest age incidence being in the fifth, sixth, and seventh decades, the respective percentages being 18.9 per cent, 42 per cent, and 28.7 per cent.

Although both lungs are affected, the right lung is affected somewhat more frequently than the left, 111 cases (57 per cent) being on the right side and 84 (43 per cent) being on the left. The most frequently involved lobes are the upper lobes, the right (27.6 per cent) being involved somewhat more frequently than the left (24.6 per cent). The right lower lobe is the next involved in frequency, 43 cases (22 per cent) being found in this area, the left lower lobe, 28 cases (14.3 per cent).

Unfortunately, there are no characteristic symptoms of primary bronchiogenic carcinoma. It begins an insidious condition and frequently follows an antecedent respiratory tract infection, such as an influenza which does not respond to therapy as these infections usually do. One hundred and one of the authors' 195 cases (51.7 per cent) gave a story of having an antecedent respiratory infection; 174 (89.2 per cent) had cough; 129 (66.2 per cent) a loss in weight; 125 (64.1 per cent) discomfort in the chest; 110 (56.4 per cent) hemoptysis; 92 (47.1 per cent) dyspnea; 61 (31.2 per cent) debility; 41 (21 per cent) had wheezing; 23 per cent had clubbed fingers; 16 (8.2 per cent) loss of voice.

The diagnosis of bronchiogenic carcinoma is usually not difficult to make if the condition is only considered. X-ray examination will usually show a shadow produced by the infiltrating tumor. It may show a massive shadow resulting from atelectasis of a lobe supplied by the bronchus, which is obstructed by the tumor. In the 195 cases operated upon by the authors, 168 (86.1 per cent) were diagnosed by the radiologist as bronchiogenic carcinoma; 4.1 per cent as pulmonary abscess; 2.5 per cent as dermoid or neurogenic tumor; 2 per cent as atelectasis; 1 per cent as bronchiectasis; 1 per cent as tuberculosis. Of great importance in the diagnosis of bronchiogenic carcinoma is bronchoscopy. Unfortunately, because of the involvement of the upper lobe bronchi in a large percentage of cases the lesion may be beyond the bronchoscopic vision or, if the tumor is located in the periphery of the lung, the bronchoscopist also may not be able to see it. In the present series, bronchoscopy was done in 161 cases (83 per cent); in the remainder, it was not thought advisable because of the location of the tumor. A biopsy was obtained in 100 and was positive in 74 (37.9 per cent) of the entire group. A valuable diagnostic method is the demonstration of tumor cells in the sputum or in the aspirated bronchial secretion. Of great importance from a diagnostic standpoint is thoracic exploration. In a male forty years of age or older who has an unexplained thoracic discomfort if a bronchiogenic carcinoma cannot be ruled out, thoracic exploration is justified, because to deny such a patient the advantage of exploration until a positive diagnosis can be made is not justified.

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The present report is based on a total of 548 cases which were seen by the authors. Of this group, 194 (35.4 per cent) were considered inoperable at the time they were first seen and 354 (64.6 per cent) were considered operable. Of the 354 cases, 47 (13.3 per cent) refused operation and 307 (86.7 per cent) were explored. Of the 307 in whom an exploratory operation was done, 112 (36.5 per cent) were found to be not resectable and 195 (63.5 per cent) were resectable. Of the 112 who were found not to be resectable on thoracic exploration, 27 (24.1 per cent) died in the hospital, and 85 (75.9 per cent) left the hospital alive. Of the 195 in whom a resection could be done, 45 (23 per cent) died within the hospital and 150 (77 per cent) left the hospital alive.

The relatively high mortality rate of the cases which were resected is due to two causes. Some are due to development of technique which is illustrated by the fact that although 45 of the 195 cases died, if one divides the cases into those operated upon before 1942 and those operated upon since 1942, the hospital mortality rate is a great deal different. Of the 35 cases operated upon before 1943, 16 (45.7 per cent) died within the hospital. Of the 160 operated upon since 1943, 29 (13.1 per cent) died within the hospital. In addition to the development of technique being responsible for the relatively large number of deaths seen in the earlier cases, the extension of the operative indications is undoubtedly a factor responsible for some of the mortality, as illustrated by the fact that 19 (9.7 per cent) of the cases had ligation of the pulmonary vessels within the pericardium; nine (4.6 per cent) had resection of major portions of the diaphragm, eleven (5.6 per cent) had resection of large portions of the thoracic wall and ten (5.1 per cent) had suture of portion of the auricle.

The 45 hospital fatalities were divided as follows: 19 (4.2 per cent) died as a result of cardiovascular disorders, of which three were the result of pulmonary and 16 cardiac; 14 (31.1 per cent) were the result of respiratory disorders; seven (15.5 per cent) were the result of hemorrhage, and five (11.1 per cent) were due to miscellaneous causes.

If the 195 cases are considered from the standpoint of length of survival, it is seen that of 181 patients operated upon six months or longer, 99 are alive at the end of six months (54.6 per cent); of 148 operated upon a year or longer, 58 per cent are alive (39.2 per cent) of those operated upon two years, 25.9 per cent are alive; of those operated upon three years, 20 per cent; of those operated upon four years, 24.5 per cent; and of the forty cases operated five years ago or longer, eleven are still alive, 27.5 per cent. If one divides the cases into those with gross extension to adjacent structures, such as the mediastinal lymph nodes, the pericardium, the diaphragm, or the chest wall and those in which there was no obvious gross extension, the results in the survival rate vary considerably. After six months they were divided as follows: No extension, 65 per cent; extension, 48.7 per cent; one year, 57.2 cent and 26.6 per cent; two years, 34.2 per cent and 17.7 per cent; three years, 28 per cent and 10 per cent; four years, 31.5 per cent and 11.1 per cent; five years, 41.5 per cent and 12.5 per cent.

If one contrasts the results obtained in the cases in which resection was done, many of which were done palliatively with those in which no operation was done, the results are also illuminating; six months, 54.6 per cent and 13.1 per cent; one year, 39.2 per cent and 5.2 per cent; two years, 25.9 per cent and 1.5 per cent; three years, of the 80 cases operated upon, 16 are still living (20 per cent) whereas none of the cases not operated upon lived three years.

Conclusions

As a result of our experience we are convinced that the diagnosis of bronchiogenic carcinoma is usually not made early, primarily because the physician does not consider the possibility of its existence and is lulled into a false sense of security because of the vagueness of symptoms. An antecedent respiratory tract infection, such as influenza which does not respond as it normally should in a male past forty years of age, is indicative of bronchiogenic carcinoma and this diagnosis must be considered until it has been excluded. X-ray is the most valuable method of making a presumptive diagnosis of bronchiogenic carcinoma and is responsible for making a correct diagnosis in almost 90 per cent of cases. Bronchoscopic visualization of the tumor is possible in less than half of the cases, because of the peripheral location of the lesion. The demonstration of tumor cells in sputum or in aspirated bronchial secretions is of great help in the diagnosis of bronchiogenic carcinoma. However, in a male past forty years of age in whom bronchiogenic carcinoma cannot be excluded, thoracic exploration is justified as a diagnostic procedure and, unless this method of diagnosis is employed, there is a likelihood of delay in many of these cases until the lesion becomes inoperable.

The only curative treatment of bronchiogenic carcinoma is pneumonectomy. Even though in the present series of cases a late diagnosis was made necessitating palliative resection in a large percentage of them, the five-year salvage rate 27.5 per cent in those in whom resection was possible, justifies this method of treatment. The fact that no patient in whom an operation was not done even though other palliative procedures, such an irradiation, nitrogen mustard, etc., survived as long as three years is justified for palliative resection in cases of bronchiogenic carcinoma. Although there are many who believe that palliative resection is not justified, the fact that 12.5 per cent of patients in whom a palliative resection was done because of extension of the carcinoma to other structures, such as regional lymph nodes, pericardium, mediastinum, diaphragm, or thoracic wall, are alive at the end of five years is justified for this procedure.

Whereas the results in the treatment of bronchiogenic carcinoma are satisfactory at the present time, when one considers that the present results are obtained in individuals with advanced lesions, it is possible to improve these results materially by earlier diagnosis and the institution of adequate therapy at the time when the lesion is still intrinsic. The results following the surgical treatment of bronchiogenic carcinoma are better than the results following the surgical treatment of gastric carcinoma. Whereas the five-year salvage rate of all the cases of gastric carcinoma in which a diagnosis is made is only slightly more than 5 per cent throughout the United States as a whole, the five-year salvage rate in bronchiogenic carcinoma in all the cases which are seen is approximately 9.7 per cent.

The Pathogenesis, Diagnosis and Treatment of the Acute Phase of Poliomyelitis

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Introduction: Poliomyelitis presents many unsolved problems with respect to the nature of the infecting agent, its mode of dissemination, means of diagnosis, methods of prevention and of treatment. Some of the gaps in our knowledge are slowly being filled. It is my purpose to survey briefly some of the current concepts regarding the origin, the recognition, and the management of the acute phase of this disease.

Properties of the Etiologic Agent: The virus which causes human poliomyelitis is one of the smallest of the filterable viruses, ranging in diameter from 8 to 30 millimicrons. There are a number of strains which differ in their immunologic properties—a fact of great practical importance in connection with attempts to develop a protective vaccine. This infectious agent is unusually resistant to destruction. It can survive in water or in sewage for as long as four months. It may not be killed by chlorine in the amounts ordinarily used for the purification of water supplies.

Man is the only natural host for this virus. The disease can be transmitted experimentally to the monkey and the chimpanzee, and a few strains have been adapted to smaller laboratory animals. However, primates continue to be the most suitable animals for research purposes, a fact which has rendered experimental investigations particularly cumbersome and expensive.

Pathogenesis: The pathogenesis of infection has for many years interested students of this disease. Some years ago it was generally believed that the virus invaded the body by way of the nose and the olfactory nerves. Though virus can occasionally be found in the nasal mucosa, pathologic examinations in fatal human cases have not shown this to be the usual route by which man is infected.

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*Read before the Section on Medicine at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

Present evidence indicates that the mouth is the most important portal of entry. From there it passes down the pharynx into the gastrointestinal tract, where it may become established in the mucosal wall. In an infected individual the agent can be found along the entire length of the alimentary canal, from tongue to colon; however, it is present in greatest quantity in the small intestine. In most patients the infection produces no symptoms whatsoever, or else symptoms so mild as to be disregarded.

However, in a certain few individuals there is clinical evidence of invasion of the central nervous system with development of a characteristic encephalo-myelitis. These are the cases which we recognize clinically as poliomyelitis. The virus particles, in some unexplained manner, enter adjacent nerve endings in the alimentary tract, travel centripetally along the axones of nerve cells, and thus are carried to the cord of the brainstem. The most marked lesions are usually seen in the anterior horn cells of the cord, but pronounced lesions may also be found in other nerve cells of the cord, the medulla, the pons, the mesencephalon, the diencephalon, and sometimes the cerebrum.

The infected individual, whether or not he has central nervous system signs, excretes large quantities of virus in his stools over a period of a few weeks to a few months. During an epidemic the virus can be removed from the feces of a large segment of the population, though most of these individuals exhibit no overt evidence of illness. At such times poliomyelitis virus can also be recovered with ease from raw sewage of affected communities. Some patients also harbor the infecting organism in discharges from the mouth and pharynx during the first few days of illness. In such patients it may be broadcast into the atmosphere by coughing or spitting.

Thus we have developed the concept of poliomyelitis as an epidemic disease which periodically infects large numbers of individuals in a community. Most of the cases are subclinical; out of each 100 to 1000 infected, perhaps one will become paralyzed. Why does this unfortunate individual develop central nervous system disease while the others escape it? The complete answer to that question is not yet known. However, there are several predisposing factors of which we are aware: It seems well established that operations in the mouth or pharynx, if performed during the season of epidemic prevalence, greatly increase the risk of developing bulbar poliomyelitis. Also, infection is significantly more common during pregnancy. Experiments in animals indicate that physical exhaustion or chilling during the period of incubation results in an increase in the incidence and extent of paralysis.

Epidemiology: Having explored the passage of the virus through the individual patient, we are next concerned with the mode of spread of the disease in a population. The organism passes directly or indirectly from one patient to another, either via feces, or via nasopharyngeal secretions. The weight of present evidence indicates that dissemination by feces is the more important of the two. It seems likely that this transmission may be accomplished in a number of ways. Close contact appears to be important in the spread of the disease. It is possible, though yet to be established, that contaminated water, milk, or food may play a significant role in transmission. Considerable interest has centered recently on the possibility that flies may convey the organisms from feces to food.

Poliomyelitis shows a striking seasonal incidence. In the northern hemisphere most cases are seen during the months of July, August, September and October. In the southern hemisphere, where the seasons are reversed, the infantile paralysis season is likewise reversed. These facts support the hypothesis that fecal spread of the disease is important. It is well known that other infections transmitted by feces are most numerous in the summer and fall, whereas diseases spread by the respiratory tract are more common during the winter and spring.

A discussion of the epidemiology would not be complete without mentioning the remarkable change in the character of the illness during the past 70 years. Previous to that time poliomyelitis was a rather rare sporadic disease which affected almost exclusively children under the age of five; hence the name **infantile paralysis**. However, since 1870 the infection has appeared in epidemics in certain parts of the world, notably in Scandinavia, the United States, Canada, Australia, and Great Britain. In these countries there has been a simultaneous and striking increase in the average age of the patients. In some recent U. S. outbreaks, as many as one-third of the victims were more than 15 years of age. In other parts of the world poliomyelitis continues to be sporadic, and continues to affect chiefly young children.

Diagnosis: The diagnosis of poliomyelitis rests principally on clinical observations. The incubation period averages 4 to 10 days, though it may be as short as three or as long as 35 days.

Illness begins with nonspecific constitutional symptoms of fever up to 103° F., headache, malaise, listlessness, anorexia, and sometimes nausea, and vomiting, and diarrhea. A small proportion of patients complain of sore throat. These symptoms last for one to three days, after which the illness may pursue one of three courses. The patient may make an uneventful recovery; to this syndrome we apply the term **abortive poliomyelitis.** Or, the illness may subside for one to seven days, only to be followed by a recrudescence of the same symptoms, this time accompanied by evidences of central nervous system invasion. As a third alternative, the phase of central nervous system invasion may follow the phase of onset without an intervening period of remission. Involvement of the central nervous system is accompanied by stiffness, soreness, and spasm of the muscles of the neck, back and legs. This syndrome is sometimes referred to as **preparalytic poliomyelitis.** A proportion of patients recover even from this stage of disease without developing muscular weakness. However, in the majority of instances, paralysis follows within one to four days. It is customary to classify paralytic cases into two types according to the clinical distribution of neurologic lesions. The spinal type refers to patients in whom paralysis is limited to muscles innervated from the cord. The bulbar type includes patients who have signs referable to lesions of the brain. Of course, the two types may coexist.

The physical findings in a typical case of acute poliomyelitis are characteristic. The fever is usually not greater than 103° F. The patient is irritable, oftentimes somnolent, but usually mentally clear when aroused. Various muscles exhibit involuntary spasm, and a sensitivity which is aggravated by motion or by palpation. Paralysis depends on injury to individual anterior horn cells, and therefore is patchy and asymmetrical and does not coincide with the distribution of peripheral nerves. It is a flaccid type of paralysis which may affect a group of muscles, a single muscle, or only a portion of a muscle. The lower limbs are most frequently involved, and the small muscles of the hands and feet tend to be spared. Lesions of the cervical or thoracic segments of the cord result in paralysis of the muscles of respiration, a serious and sometimes fatal condition. The combination of paralysis of some muscles and spasm in others often leads to deformity of parts. The deep reflexes are diminished or absent. There are no serious disturbances in poliomyelitis other than tenderness of muscles.

Signs of brain involvement may appear at any time in the course of the acute phase of illness. The Minnesota Poliomyelitis Research Commission offers the following useful classification of bulbar poliomyelitis:

Classification of Bulbar Poliomyelitis

1. **Cranial nerve nuclei group:**
    a. Upper cranial nerve group: III, IV, V, VI, VII, VIII.
    b. Lower cranial nerve group: IX, X, XI, XII.
2. **Central autonomic group:**
    a. Respiratory center
    b. Circulatory center
3. **Encephalitic group:**
    a. Diffuse
    b. Focal.
4. **Combined bulbar-cervicothoracic group:**

Acute poliomyelitis runs a self-limited course lasting three to seven days. Paralytic phenomena may appear at any time during this period, but progression of neurologic damage ceases with the subsidence of fever. However, spasm and tenderness may persist for some weeks.

These, then, are some of the clinical characteristics of infantile paralysis. The physician must make his diagnosis chiefly on the basis of clinical findings, for unfortunately there is as yet no convenient or satisfactory laboratory test for specific diagnosis.

Laboratory Diagnosis: The etiologic agent can be isolated from the stools of patients or of carriers, and from the central nervous system tissues of fatal cases by inoculation into monkeys. But this procedure is difficult and expensive, and is used only in special research problems. The neutralization test, employing mice, has not proved useful. There is as yet no serologic test.

Abnormalities of the cerebrospinal fluid are found in 90 per cent or more of cases of paralytic poliomyelitis. These changes are not pathognomonic, but they are characteristic, so that lumbar puncture should be performed. The white blood cell count of the fluid is increased, reaching a maximum of 10 to 500 during the first week of illness; rarely, the count may rise higher than 1000. The cells are predominantly lymphocytes, though occasionally as many as 50 per cent will be polymorphonuclear leucocytes. The spinal fluid protein is commonly elevated to levels of 60 to 125 mg. per 100 cc. during the first few weeks. The leucocyte count of the blood is normal or slightly elevated. The blood sedimentation rate is usually normal.

Treatment: There is no specific method of treatment of the infection itself. The available therapeutic measures are all symptomatic and supportive in nature. They are aimed at saving life, relieving symptoms, preventing deformity, and salvaging and developing to the full what is left after the acute illness has run its course.

The patient is kept at strict bed rest, and motion of involved muscles is discouraged. He is irritable and objects to being disturbed. It is good policy to respect his wishes, and to avoid any unnecessary and exhausting manipulations. Everything possible should be done to reassure the patient and to keep him comfortable and in good spirits. Detailed evaluation of muscle function is better postponed until later in the course of illness. The affected parts are placed in positions of greatest comfort and are immobilized with sandbags, pillows, or footboards, in such a way as to prevent the development of deformities. The local application of heat often affords temporary relief of muscular spasm, pain and tenderness. One convenient method consists of applying hot wool compresses; another method involves the immersion of the patient in a tub of warm water.

The patient's nutrition must be maintained. If he can swallow he is fed by mouth. Parenteral fluids, salt, glucose, and amino acids may be given as necessary.

There is no known chemotherapeutic agent which influences the poliomyelitic process itself. Aspirin may be used for its respiratory effect. It is important to avoid all respiratory failure. Neostigmine and curare have been recommended for relief of muscle spasm. We do not advocate their use until more is known about their efficacy. Some patients, especially adolescent boys, suffer from transient urinary retention. This can sometimes be relieved, and catheterization avoided, by using a drug called "Furmethide" which stimulates the parasympathetic nervous system. Patients with disturbances in swallowing and breathing are in danger of developing pneumonia, and should be given penicillin prophylactically.

The mechanical respirator has proved to be a life-saving device in selected cases. It is most effectively used in patients with cervicothoracic cord involvement and paralysis of the muscles of respiration. Such patients should also receive the benefit of oxygen, administered most effectively through a nasal catheter.

Patients with the bulbar form of disease are of special therapeutic importance because nearly all deaths in acute poliomyelitis occur in this group of patients. Lack of oxygen constitutes an immediate threat to life in most of these individuals. Hypoxia may result from pooling of pharyngeal secretions, obstruction of the airway, irregularities in rate or depth of respiration, or pulmonary edema. Secretions must be removed by postural drainage and by suction. Oxygen is administered by nasal catheter. The Minnesota Poliomyelitis Research Commission has emphasized the desirability and the safety of tracheotomy in selected cases. It is indicated in patients with obstruction of the airway or in patients who are in danger of aspirating mucus. This problem arises particularly in the presence of paralysis of the ninth, tenth, and twelfth cranial nerves.

It is sometimes necessary to use the respirator for patients with paralysis of the respiratory center, if they are unable to maintain adequate exchange of air. However, its use with such patients is difficult and dangerous and requires experienced judgment.

The feeding of bulbar patients presents special problems, for they may be unable to swallow. In such instances oral feeding is dangerous, and one must rely on intravenous alimentation, followed later by gavage.

Therapy beyond the acute stage of poliomyelitis includes passive, and then active motion of affected muscles. It involves muscle re-education, proper braces, and sometimes operative correction of deformities. These measures require the special skills of experts in physical medicine and in orthopedics, and are outside the scope of this report.

Prevention: Despite great efforts devoted to the development of an immunizing agent, there is yet no vaccine which will prevent the disease in man. I have already mentioned a few predisposing factors; attention to these will perhaps protect a few individuals. Tonsillectomy operations should not be performed during seasons of prevalence. Undue physical exhaustion and chilling are to be avoided.

Summary: Poliomyelitis occurs in seasonal outbreaks in the United States. At such times a large number of people are infected, and a small fraction of these develop the paralytic form of the disease. Evidence points to the alimentary tract as the chief portal of entry and of egress of the virus. Diagnosis is based on the clinical findings and the spinal changes. There is as yet no practical laboratory test for specific diagnosis. Treatment of the acute phase of disease is symptomatic.

The Responsibilities of Private Physicians In the School Health Program*

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THE SCHOOL years are the most healthful period of life. There are, to be sure, physical defects of the eyes, teeth, posture and the like. There is a lack of immunity to measles, chicken pox, diphtheria and the streptococcus infection. There is a special predisposition to acute rheumatic fever, infectious mononucleosis, tonsillitis, impetigo, and ringworm of the scalp, but there is no degenerative disease and but little chronic disease found in this early period of life. As the result of this situation, a community can sometimes ignore its school health problems and with no immediate dire results.

The effects of neglecting the health problems of school children do, however, show up in many undramatic but important ways and a community that neglects to provide a good school health program is failing to meet an obvious responsibility. To have all the children in the entire community brought together in one organization, ofttimes under one roof and in a learning mood, offers such an unusual opportunity that it is hard to see how any health authorities can be blind enough to ignore it.

Reasons for A Good School Health Program

A good school health program is needed for many reasons. The teacher needs to know something about the health of her pupils in order that she can adjust her teaching program to their needs, and in some instances, adjust the individual child to the teaching program. The physical education teachers have to know the condition of their pupils in order to classify them for their physical activity program and to make their physical activities safe and well within their individual powers. The health department must know how many children have been and have not been immunized against diphtheria, smallpox, whooping cough and perhaps tetanus. The school administrator has to know how many hard-of-hearing children he has, how many visually handicapped and how many crippled children. Without that knowledge, he cannot plan special facilities for the care of the handicapped. Our armed forces want the remediable defects found and promptly referred for medical treatment and correction. The parents want assurance that the school will offer a healthful environment for their children and a health-teaching program that is effective.

For all these reasons then, it is essential for every school, regardless of size or condition, to have a planned and well-balanced school health program.

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*Read before the Section on Public Health and Hygiene at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

The Elements of A Good School Health Program

In the brochure "Suggested School Health Policies," forty-five national organizations pooled their thinking and gave us a charter for school health. The school health program as outlined in that brochure includes the following:

1. **Health Service.** This includes continuous health appraisal of school children by parents, teachers, nurses and doctors, continuous adjustment of the school to the individual needs of the child, the use of all community resources to correct defects and to make maximum adjustment to irremediable defects.
2. **Healthful School Living.** This means a school environment with appropriate illumination, hygienic seating, good ventilation, heating, the use of good mental hygiene in the classroom, sanitary lunching arrangements, and so forth.
3. **Health Teaching.** Teaching the child how to keep well, teaching him what modern medicine has to offer; teaching how voluntarily to meet the costs of illness are an essential part of school's responsibility.

Basic Organization for School Health

Every school should have a medical adviser, part-time or full-time, employed either by the health department or by the education department. Every local medical society should have a committee on school health to advise with the school health authorities in the development of their program. Every teacher should be trained for, and expected to do, a morning inspection of her pupils, continuous observation as the day's work goes on, a monthly check of weight, a three-time yearly check of height, an annual check of vision, hearing, posture, skin and teeth. Every public health nurse and every school should be trained to assist the teachers in their screening examination of pupils; to assist the physicians in scheduling medical examinations and getting parents to the medical examinations of their children; to take charge of the follow-up in order to get corrections of the defects found. These general principles of basic organization will be found to be sound in rural areas as well as urban, in small schools as well as large ones.

Optional Patterns of Organization

Each state will have to decide upon the frequency of routine medical examinations. The problem is being experimented with in a variety of ways. Upstate New York continues to require a medical examination of every school child every year; Pennsylvania requires an examination every two years; Wisconsin and Oregon every three years; Illinois and New Jersey every four years. In most of Mississippi, examination at entrance and at the sixth and eleventh grades is generally required. In Harrison and Jackson counties of Mississippi, however, the so-called Astoria Plan is in use. Children are carefully examined at entrance and subsequent examinations are then made only when the child is referred by the teacher who has reason for believing the child is in need of re-examination.

The Joint Committee on Health Problems in Education of the National Education Association and American Medical Association in a recent examination on entrance and again at the fourth, seventh and tenth grades is a minimum requirement, with further examination whenever the teacher has reason for believing that the child is not doing well and is in need of medical study.

Within the various states, each community must make its own decision whether the examination of school children will be done by the family physician with report sent to the school, whether the examination will be done in the school by the medical adviser, or whether the examination will be done in the school by teams of physicians organized by the school medical adviser. Whatever the pattern set up locally, all are in agreement that somehow medical examinations must be periodically done, defects found and remedied.

The Responsibilities of Private Physicians

Whatever the pattern of school healh service established in a state or community, in every instance the private physicians have many responsibilities to meet and many duties to perform. Many school systems have school health councils with school health committees for each individual school. Physicians will frequently be asked to act on these councils and participate as members. The importance of participating in the work of these councils is obvious.

School authorities will often ask local medical societies to appoint school committees, to submit panels of physicians from which a school medical adviser can be chosen, and to suggest a salary schedule for the remuneration of school medical advisers. A local medical society that fails to comply with this request is missing an opportunity to make its best contribution to the school health program.

In those localities where the schools look to the family physician to do the medical examinations of their pupils, it is essential that the school physician be familiar with the school physical education program, with the special classes for the visually handicapped, crippled children and cardiac cases and with the teacher's needs for information. If the physician is not familiar with the school activities, how can he intelligently advise regarding participation of his patients in programs of physical education, athletics, adopted individual exercises, etc.? How to share the physician's knowledge of the patient with the school workers and at the same time protect the confidential relationship between doctor and patient is sometimes a problem. If the proper relationship between school workers and physicians is established, the members of the two coordinate professions will be able to share their knowledge of the child without danger that the information will be missed. Where the physical education program of a school offers a wide variety of physical activities and the local physicians are aware of its flexibility, there should be no reason for the issuance of blanket excuses or permanent excuses from physical education. By proper consultation between physical education teacher and physician, a place can be found for almost every child in the physical program.

In a community where the medical examination of school-age children is made, a primary responsibility of the school medical adviser, cooperation between the school medical adviser and the practicing physicians, is again extremely essential. Sharing of information about acute rheumatic fever cases, cardiac cases, epileptiform seizure cases, and communicable disease cases is absolutely essential. The practicing physicians and the school medical adviser are co-partners in protecting the health of school-age children and they can function effectively only when they function as a team.

In many communities, the school medical adviser, with the assistance of the local medical society will organize examining teams of physicians. These physicians should be chosen from panels suggested by the local medical society. Though the use of specialists permits a greater accuracy in the diagnosis of individual defects, this group method will be found to fall short educationally unless at the conclusion of the examination there is an opportunity afforded for the physician to sit down with the child and parent, bring the results of the examination together and make final recommendations.

No matter how the school health program is organized, the work of correcting defects that are found will have to be done by the members of the local medical society. Therefore, the local medical society should assume leadership in setting up community plans for the best possible use of all of the community resources in getting school children's defects remedied. Where the problem is a lack of conviction as to the need on the part of parents, the services of the school nurse or public health nurse will have to be called upon. Where the problem is one of indigency, the welfare department will have to be called upon. (Perhaps it will be practicable to set up a prepaid medical care plan for all indigent families, with the premiums paid by the welfare department as is done in the Topeka-Shawnee County Health Unit, Kansas.) Where medical indigency is the problem, perhaps a Red Cross loan fund or special funds supported by service clubs and women's organizations will prove practicable. In some communities a welfare panel of physicians, dentists and opticians is used to spread the welfare cases evenly over the practicing group. Though this works well in some areas, it is subject to the criticism that it does not give the patient a free choice of physician, dentist or optician.

Extending beyond the school health program but nevertheless essential to the development of effective school health programs, are the following community efforts to which the local medical society may well give its support: the development of full-time public health service following lines laid down in the Emerson Report; the implementation of the Hospital Survey and Construction Act of 1946 in order to get hospital beds and physicians into rural areas; development of voluntary prepaid hospitalization and medical care plans.

Conclusions

1. Our public schools are educational institutions, not medical institutions. They have no place in their organization for filling teeth, fitting glasses or attempting clinical treatment.

2. The schools, however, offer an unparalleled opportunity for teaching personal hygiene, for teaching how to plan for medical care, for checking inoculations, for discovering defects and stimulating correction, for establishing sound habits of eating, exercise and recreation.

3. If medicine is to meet its implied responsibility adequately for promoting health as well as its obvious responsibility for treating disease, every practitioner of medicine is obligated to give us his best efforts to the development of an effective school health program such as we have described.

A Fifteen Year Statistical Study of Amebiasis

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Greenville, Miss.

DURING THE year of 1929 we became cognizant of the fact that a great many of the patients that we were coming in contact with were having intestinal upsets other than those due to food poisoning, pellagra, nervous indigestion and various forms of enteritis associated with acute respiratory diseases, etc.

It was at that time we became very much interested in more careful stool examinations. From then on we have been most careful and diligent in our search for amebae in our examinations. We realized that the first requisite was well-trained technicians who were competent and capable of recognizing various species of amebae. That, secondly, the proper collecting of the stools was absolutely necessary and that, thirdly, routine stool examinations were most essential.

You are all familiar with the following classificiation of amebae, namely: Endamoeba histolytica, Endamoeba gingivalis, Endamoeba Coli, Iodamoeba butschlii, Endolimax Nana and Dientamoeba fragilis. The two species that are pathogenic are Endamoeba histolytica and Dientamoeba fragilis. The collecting of stools for this differentiation is most essential. It has been proved that formed stools contain amebic cysts and that by proper staining the species can definitely be determined. A wise procedure that has been worked out is the collecting of the first and second stools following a saline purge—with this the first stool which is a formed one can be examined for cysts and the second stool, which is liquid, can be examined for the trophozoites and in that way a double check can be made whereby one can be more or less absolutely positive of the diagnosis. The zinc—flotation test, though possibly longer to make, is recognized as being one of the surest ways of finding and diagnosing amebae. Then, too, smears made directly from amebic ulcers by proctoscopic examination is another important means of finding amebae. It has been shown through years of intensive study that about 10 per cent of individuals examined are positive for Endamoeba histolytica.

The more one studies amebiasis the more interesting it is from many standpoints. During the fifteen-year period, from 1932 to 1946 inclusive, we have seen 953 cases of amebiasis. Although the condition is not so prevalent among babies and children as adults yet we have found it in babies just four weeks old. This we call contact amebiasis and by anti-amebic treatment the intestinal upset in these babies is corrected and the stools in each case become negative. There has been much discussion by quite a few as to the possibility of the amebae found in babies' stools being a different strain type or species from those found in the stools of adults. It would seem logical that the amebae found in babies' stools are the same as found in the adults' stools for the characteristics are all the same and routine stool examinations show some member of the household with amebiasis, usually the mother or the nurse.

There is practically no age limit to this condition. Our cases range from four weeks to

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*Read before the Section on Medicine at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948 eighty-six years of age. In adults one may expect to find various and sundry symptoms. The patient may be constipated or may have acute amebic dysentery. In the latter instance the patient is usually acutely ill with temperature ranging from 99 to 103, with sometimes nausea and vomiting and having frequent bloody stools containing a great deal of mucus. If the patient gives a history of constipation frequently there are attacks of loose stools from time to time. These are the patients who usually complain of vertigo, indigestion, gas and a soreness throughout the entire abdomen. So many patients with amebiasis complain of headaches, nervousness, shortness of breath, weakness and lack of endurance. Many have neuritic pains and even sore, stiff and painful joints with considerable limitation of motion. Here then we have another type of focus of infection to contend with for by clearing up the amebic infestation the neuritic pains and the joint symptoms disappear. Amebae as you know frequently find their way into the appendix, in some instances causing acute appendicitis requiring appendectomy. On the other hand because of amebae usually being harbored in the caecum symptoms are often such as to mislead one into making a diagnosis of acute appendicitis with the surgeon finding a normal appendix. In two instances we have encountered amebae in the gallbladder and have had a few cases of amebic abscess of the liver.

There is another condition I think important to mention—that of ameboma. In this condition the stools are usually negative and frequently even at operation the condition is mistaken for carcinoma of the bowel and not until the pathologic report is obtained is the true condition diagnosed. In several cases of amebiasis we have found also carcinoma of the bowel, thus one should be constantly on the alert for such a possibility. One may assume that the prolonged irritation and irritability of the bowel is a predisposing factor for such a complication.

Amebae have no regard or respect for sex or race. In our series we have had 587 females with positive stool findings and 366 males with positive stool findings. In other words, 61.5 per cent of our cases were females and 38.5 per cent were males, probably due to the fact that at least 60 to 70 per cent of our practice are females and 40 to 30 per cent are males. As to race it would seem that this condition is more prevalent in the white than in the colored race but we feel that the reason of this apparent difference in our patients is due to the fact that our practice is about 75 per cent white and only 25 per cent colored.

We have found in following our cases of amebiasis that some, even after thorough and prolonged treatment, continue with many of the original symptoms although repeated stool examinations are negative. We realize that in all cases of amebiasis the patient's resistance has been greatly lowered, that the colon has been considerably inflamed and that invariably with such a condition existing secondary infections develop and not only do we have to reckon with the amebic damage and disturbance but with active and persistent secondary infections. This naturally calls for treatment other than specific amebic handling of these cases. We have also found that a large percentage of cases of amebiasis require prolonged and meticulous care and active treatment and that none should be considered recovered until negative stools have been obtained for several months.

We are convinced that if routine stool examinations are made by competent technicians in every physician's practice, the incidence of amebiasis would be found to be much greater than it appears to be at the present time. In collecting statistics it has been most gratifying to receive reports from over 91 per cent of the health officers of the various states of the union. It is impossible in the time allotted to give reports for the fifteen-year period from each state but surely it is interesting to get somewhat of a cross-section of the statistics collected which will not only give an idea of the distribution of this disease but will also indicate the fact that physicians as a whole are giving more thought and study to amebiasis and more intensive search for amebae.

Dr. J. M. Campbell of Harrisburg, Pa., made this statement in his letter replying to my request and I quote: "The Chicago physicians are on their toes with consequent increased recognition of the disease." During the fifteen-year period there have been 164 cases of amebiasis reported in Pennsylvania with 62 per cent in males and 38 per cent in females and the ages ranging from under four to over seventy-four years.

In New Jersey during that period 453 cases were reported, from New York, New

York City excluded, 599 cases were reported. From Maine six cases, Connecticutt 87 and Massachusetts 118.

In the middle West during the fifteen-year period under study 7,348 cases were reported in Illinois, 476 cases were reported in Michigan, 793 in Minnesota and 2,686 were reported in Missouri. An interesting observation from North Dakota was as follows: 32 cases of amebiasis were reported in 1947 all by a discharged army doctor — the significance of which I believe is, this doctor is definitely on the alert searching for amebae.

Dr. W. R. Giedt of Seattle, Washington, made this statement in his letter and I quote: "We feel amebic infections are considerably more prevalent than our reports indicate." From 1933 through 1947 there have been 224 cases reported in the state of Washington. And from one county in 1947, 76 cases were reported. Dr. Giedt stated that this unusual number was to a large extent due to the heightened interest in this disease in one of the counties in which he has carried on an epidemiologic study. From Oregon 287 cases were reported, 34 from Montana, 80 from Colorado and during a five-year period 45 from Arizona.

During a nine-year period, 1938 through 1946, 4,636 cases of amebiasis were reported in Texas. From Arkansas during the fifteen-year period 1,046 cases were reported, from Georgia 1,201 cases, and to top them all from our own state, Mississippi, 18,830 cases were reported during the fifteen-year period from 1932 through 1946, and of this number 3,166 were reported from Washington County. Thus 16.8 per cent of the cases of amebiasis reported in Mississippi were reported from Washington County. The fact that 18,830 cases of amebiasis were reported in Mississippi during this fifteen-year period is indeed an astounding observation, however, it is quite possible that Mississippi's statistics are more complete than most of the other states for some states failed to require the specifying of the type of dysentery, whether amebic and bacillary or the reporting of amebiasis — and in some states, the Division of Communicable Disease Control was not established before 1937 or later.

From the incomplete statistics gathered and recording definitely reported cases of amebiasis during the fifteen-year period, 1932 through 1946, there were reported throughout these United States 45,511 cases of amebiasis, an average of 3,034 cases yearly. From these statistics it is readily seen that though this condition was at one time considered a tropical disease amebiasis can be and is found rather widely distributed.

DISCUSSION

S. K. Johnson (Pelahatchie)

To me the most remarkable point that Dr. Archer has made in his most interesting presentation is the relation of cases of amebiasis reported in Mississippi during this fifteen years to the number of cases reported in the whole United States for the same period; for Mississippi 18,830, for the whole United States 45,287; that is 40.5 per cent. As Dr. Archer states, of course, there are factors which make these figures incomplete but with a percentage like that, it seems to me that physicians in this state must be more alert in looking for amebiasis and recognizing it, than elsewhere.

Any general medical examination, done anywhere should include a stool study just as it includes a urine study. The presence of pus, blood, and mucus are often important as leads in diagnosis of disease even though parasites may not be found.

The method of collecting stools following a saline purge as suggested is, I think, the method of choice in warm stool examination. The finding of trophozoites which are motile and contain red blood cells in their cytoplasm is diagnostic of E. histolytica infection and the stained cysts from the solid specimen serve as a check on the variety of amoebae present.

The technician examining the stool must be well trained. The trophozoites are hard for the untrained eye to see and the cysts are hard to differentiate. Above all, the technician must be conscientious and not have a squeamish nose.

We have had the same experience as Dr. Archer in that we have had many of these patients with neuritic and arthritic symptoms. Patients with amebiasis are prone to have a plenitude of symptoms. Also, as he has mentioned, we have had numerous patients who continued to have symptoms after treatment and after negative stools were obtained who improved after resumption of treatment.

One point which I would like to stress is the apparent inefficiency of the drugs which are now in use for treatment: emetine, the iodine complexes, and carbarsone. We have used these in heavy doses and over long periods of time and have a large percentage of recurrences, which, of course, might be infections. Evenso, the treatment is long drawn out and rather expensive.

Shrapnel reported a series of cases treated with enteric coated tablets of emetine taken orally with excellent results. I applied to the manufacturer of these, Eli Lilly and Company, for a supply for clinical trial. They replied that in the hands of others than Dr. Schrapnel there had been some severe reactions of vomiting, diarrhea and abdominal pain, and that they had discontinued the manufacture of the drug in this form.

I think that with more careful examination of feces, better training of technicians, and better recognition of the importance of stool examination, amebiasis will become more important as a disease entity and will be found to have a higher incidence and wider distribution than is now recognized.

E. T. White (Greenville): Dr. Archer has covered the subject of amebiasis from a clinical point and I am going to try to bring out a few points in the differential diagnosis of the various species of amoebae and our technique.

We usually have the patient come to the clinic and give him a saline laxative. The first and second stools are collected. The first stool which is usually semi-solid is examined in a saline suspension smear and iodine stained smear. If no amoeba or cysts are found in these a portion of the stool is emulsified in zinc sulphate solution and set aside for a few hours when smears are taken from the surface to be examined for cysts. This technique will concentrate the cysts many times making it possible to find them even if the infestation is very light. The second specimen which is usually liquid is examined for trophozoites by making a saline-suspended smear and one in Quensel's solution. The value of the Quensel's solution is that it brings out the nuclear structure fairly good and is a valuable aid in helping to differentiate the various species.

The most important differential characteristics of the cysts are the nuclei and chromatoidal bodies. Endamoeba histolytica have from one to four nuclei with a faint beaded nuclear membrane and a small central karyosome. The chromatoidal bodies are oval or thick rod-like masses with rounded ends. Endamoeba coli cysts have from one to sixteen nuclei with a thick nuclear membrane and the karyosome is large and excentrically located. The chromatoidal bodies are filamentous or thread-like with square or pointed ends. Endolimax nana cysts are oval or ellipsoidal. They have one to four nuclei with a very faint nuclear membrane and the karyosome is near or on the nuclear membrane. There are very few chromatoidal bodies present. Endamoeba butschlii cysts are irregular shaped, have one to two nuclei with an excentric karyosome that is surrounded with large granules. No chromatoidal bodies are present. Dientamoeba fragilis does not have a cyst stage.

The trophozoites in unstained preparations are often hard to differentiate. Endamoeba histolytica trophozoites vary from 16 to 60 microns in diameter, have a glossy color with a granular cytoplasm which may contain red blood cells. The nucleus is invisible. The pseudopdia are rapidly extruded after which the endoplasm flows into them and progressive movement occurs.

Endamoeba coli trophozoites are from 15 to 50 microns in diameter. The cytoplasm is colorless and less refractile than Endamoeba histolytica, motility is sluggish and usually not progressive. The cytoplasm contains bacteria, crystals, vegetable cells and very seldom red blood cells. The nuclei are usually visible.

Endolimax nana trophozoites are small, averaging 8 to 10 microns, the cytoplasm is granular and the nuclei are not visible.

Endamoeba butschlii trophozoites are rarely seen. They vary from 8 to 20 microns. The cytoplasm is granular and there is usually one or two large glycogen vacuoles present.

Dientamoeba fragilis trophozoites are 5 to 12 microns in diameter. They are actively motile and their most characteristic feature is the presence of two nuclei in the majority of the amoeba.

Culturing of amoeba and iron hematoxylin stains are valuable aids in differentiating the species of amoeba but are time consuming and are rarely resorted to.

I think it is very important for the species of amoeba to be differentiated because usually only Endamoeba histolytica and dientamoeba fragilis are pathogenic and valuable time may be spent in giving anti-amoebic treatment for nonpathogenic strains of amoeba when actually the patient is suffering from some other form of disease which may be infectious, allergic, deficiency or malignancy.

Dr. Archer: (Closing) I wish to thank the state health officers for their assistance in furnishing the information, and I also want to thank Dr. Johnson and Dr. White for their discussion.

Vomiting of Pregnancy*

JOHN A. KING, M. D.
New Orleans, La.

(Editorial Symposium)

The cause of vomiting of pregnancy is still unknown. This affliction occurs in about half of all pregnancies and may be either very mild or severe enough to cause malnutrition and even death. There is a great psychological factor in many cases, but this cannot account for all of them, and in the very severe cases, dehydration, vitamin and carbohydrate deficiency and acidosis all combine to make the patient's condition more precarious.

In the milder cases of nausea and occasional vomiting, light sedation is usually all that is required. Phenobarbital in tablet form or as the elixir may be used in doses of grains 1½ to grains 4 per day. Foods which are hard to digest like greasy or fatty foods should not be used. The morning diet should consist of little liquid, usually water or black coffee, toast and jelly, and poached or boiled eggs. Later in the day more liquids can be taken. The patient should be reassured that she will get all right and soon will be eating everything.

In the more severe cases with daily vomiting, loss of appetite, and lack of response to the above treatment, the therapy must be more energetic. More bed rest should be obtained. Usually a nap should be taken after the mid-day meal. The patient should discuss her home life with the physician. Sources of irritation, such as in-law friction, arguments with husband, money worries, and any help that he can give should be offered in the hope of giving her an insight to her problem. The influence of nervousness upon the function of the stomach should be explained. It should also be explained that the developing child will not be harmed by the prolonged vomiting.

Heavier sedation should be prescribed, either with barbiturates or bromides. Frequent small feedings should be given—especially fruit juices, jellies, dry bread, lean meat, and fresh vegetables. Sometimes if sufficient liquids cannot be taken by mouth, retention enemas can be given.

Intramuscular or intravenous injections of the B vitamins are frequently of use to stimulate appetite and to take the place of those lost in the vomitus. Especially useful is pyridoxine hydrochloride (vit. B6) in doses of 100-200 mgm. per day.

In severe cases of vomiting when the patient loses weight rapidly, and cannot retain even liquids, it is necessary to hospitalize her. Heavy sedation is given, sometimes grs. 8 to grs. 12 of a barbiturate per day. Intravenous or subcutaneous fluids are given so that the urinary output is 1200 to 2000 cc. per day. Vitamins are usually added to the infusion fluid, which should be 5 per cent glucose in normal saline. Nothing by mouth is given for 24 to 48 hours until the retching is stopped. Then dry feedings and light diet can be started.

Sometimes blood transfusions are of aid in helping these patients to regain their strength.

Occasionally a patient will not respond to any treatment and continues to retch and vomit even when taking nothing by mouth. If slight jaundice appears and urinary output diminishes, it may be necessary to perform a therapeutic abortion to save the woman's life. However, this operation is becoming more rare, as sedation, fluids, and vitamins are being given more freely nowadays.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

We have important meetings in the offing. The State Hospital Association meets at the Buena Vista Hotel, October 18 and 19. President W. H. Parsons and Program Chairman W. H. Brandon have arranged a fine program and nice entertainment. We have a fine hospital building program under way in our state, but its success after all must depend upon the active cooperation of the medical profession and the people in charge of the administration. So the doctors and the administrators should attend the state meeting intent upon real study of our hospital problems.

The Southern Medical Association meets at Miami, Florida, October 25 to 29. Dr. Lucien LeDoux of New Orleans is the honored president. The Southern Medical is one of the very best known organizations for the advancement of scientific medicine.

The Southeastern Surgical Congress will meet in Biloxi in January and then our state meeting will follow at the same place in May. The Coast has the margin on meetings for the next few months. Every doctor needs to give some of his time to organized medicine.

The third quarterly meeting of the Mississippi Medical Society was held at Amory on the second Tuesday in September. Dr. Buford Word of Birmingham was the visiting essayist. The finest banquet in which we have participated for many moons was served at the Park Hotel, Councilor M. Q. Ewing presiding. The certificate and button were delivered to Dr. M. M. McMillan of Guntown who has been outstanding in the practice for more than fifty years. Dr. R. B. Caldwell, president of the Mississippi State Medical Association, paid fitting tribute to Dr. McMillan. Amory is the home of the Sage of Monticello in medicine, Dr. G. S. Bryan. He was unable to be present at the meeting, but was visited by almost every doctor who attended the meeting. He has been and is an inspiration to one and all in the profession.

The December meeting of the society will be held in Tupelo. We predict that it will be the largest in many months.

The Fifty-Year Club, safely piloted by Dr. W. A. Evans, president, Dr. W. H. Frizell, vice-president, and Dr. W. H. Anderson, sponsor, is moving along. In delivering the certificates supplied by the executive secretary of the State Board of Health and the buttons by Dr. Anderson, the men who have been practicing for fifty years or more have the choice of a public meeting at their church, one at their home, or recognition at a medical meeting. Some very fine public meetings have been held, among the outstanding being: Dr. J. Rice Williams of Houston, G. S. Bryan of Amory, W. A. Johns of Corinth, J. W. Lipscomb of Columbus, W. L. Little of Wesson. W. H. Frizell of Brookhaven, J. W. Crumpton of Sturgis, J. H. Stennis of Mathiston, L. H. Hightower of Itta Bena, G. L. Biles of Sumner, J. W. Lucas of Moorhead, W. D. Smith of Senatobia, G. H. Wood of Batesville, and J. P. Hitt of Tunica. To this noble band belong about eighty-five doctors in Mississippi. It is expected that all will have their certificates and buttons by the first of the year and then we will be ready for the new initiates, among whom will be some of the most select in our state association.

The public presentations especially have furnished a wonderful opportunity to do honor to whom honor is due, to bring about a better understanding between the laity and the medical profession, to review briefly the special work of each doctor along with the march of medicine and the outstanding service it has rendered, outstripping state medicine. It has strengthened church fellowship and inspired appreciation in the community.

The cooperation on the part of the community and the officials of the state association has been very fine. President R. B. Caldwell and president-elect B. B. O'Mara have been very active and cooperative along with the members of the council.

We are looking forward to a much greater attendance of the Fifty-Year Club next May.

DELTA TO HAVE ANNIVERSARY MEETING

A cordial invitation is extended to all the doctors of Mississippi to attend the twenty-fifth anniversary meeting of the Delta Medical Society which is to be held in Greenwood, Wednesday, October 13. In the spring of 1923, a group of doctors from Washington, Sunflower, and Humphreys counties conceived the idea of a medical society embracing all of the Delta counties. Some of those taking an active part were Doctors W. B. Martin of Indianola, W. B. Dickins of Greenwood, J. W. Lucas and R. M. Donald of Moorhead, A. M. Wynne of Arcola, W. B. Harrison of Belzoni, Hugh and Paul Gamble and C. P. Thompson of Greenville, and others. After preliminary meetings and conferences with the councilors of the Mississippi State Medical Association at their annual meeting in Vicksburg in May of 1923 the organizational meeting of the Delta Medical Society was held in Moorhead, Wednesday, May 30, 1923. On June 2, 1923 a charter was issued by the Mississippi Medical Society, with Dr. W. B. Martin of Indianola, president, and Dr. R. M. Donald of Moorhead secretary.

The anniversary meeting will be held in the Confederate Memorial Building in Greenwood beginning at 2:00 p. m. The guest essayist will be Dr. M. L. Michael of New Orleans whose paper will be "Intestinal Obstruction." Other essayists are Dr. John H. Graves of Leland, Dr. L. B. Otken of Greenwood, Will Whittington, Jr., of Greenwood, Dr. Jack Russell of Cleveland, and Dr. J. T. McRae of Ruleville.

Every doctor in this country will surely want to read the thrilling biography of Dr. E. H. Cary of Dallas, Texas. He is without doubt at the very top as a benefactor in American medicine. Dr. Edd Cary is a native of Alabama, but medically speaking he is a citizen of the world. He is broadly educated and outstanding in his specialty of the eye. In deed and in truth he possesses a professional mind, a medical soul and a great heart. He is a man of professional integrity, of medical vision, and has outstanding practical application when it comes to making his visions come true. No more popular man in American medicnie has yet lived and yet every honor that has come to him has been paid for many times by his actual service to organized medicine and in turn to the people. He is a past-president of his state medical association, of the Southern Medical Association, and of the American Medical Association. His work for the Baylor Medical School and later the Southwestern Medical Foundation is monumental. He constructed the Medical Arts Building in Dallas as a means of bringing the doctors together and bringing about a better understanding one with the other. This plan vouches for his practical sense and good reason. His work in organizing the Blue Cross Insurance which is now held by twenty-five million people or more and has reached to every state in the union indicates the expansive character of the man and his ingenuity in combatting state medicine. As president of the National Physicians Committee both the medical profession and the people owe him an everlasting debt of gratitude. Dr. Cary is a kind-hearted, friendly man, with a mental honesty that gives him great power. He loves a good joke and his enthusiasm and sincerity for a righteous cause is always inspiring. He is now past the seventy-five-year milestone, but is still going fast. He has never known the word "stop." He is a living evidence of our theory, "If a man keeps mentally and physically fit he may be worth more to human society every day that he lives even though he attains a full century." This book is written by Booth Mooney and published by Mathis Van Nort and Co. The price is five dollars, a rare value. We are sure the J. A. Majors Company, so well known in every nook and corner of the South can secure the book for you. Write Dallas, New Orleans, or Atlanta.

This is a wonderful world and wonderful things are coming to pass in it. For nearly four years I have been disabled from work and I have not attended medical meetings, and in consequence I feel that I have fallen behind the forward march of medicine. Even penicillin, the wonder of medicine, had not been released to the general practice of medicine, then. Consequently I have not been able to use and estimate it. But marvelous things have been done and even more marvelous things will soon be done. I have read that our government has a quantity of atomic bombs, already made and ready for use sufficient to destroy every town and city in the world. This may not be true, then again, it may be true. Many things that are foretold in prophecy have been demonstrated recently. Heretofore we were compelled to use the predictions as symbols. I have long believed that words found in the Bible should be construed literally. Then the meaning would be clear. Still many things were not clear because events were predicted that had never been made possible before. For instance, it is said in Revelation, that some time, a missile would fall into the sea that would change the physical condition of the waters and destroy the fish. It is now easy to believe and understand. We may be in the early days of the great tribulation, "such as never was since time began." The Jews and unbelievers may be about to undergo this tribulation. If so, the Lord may soon descend and the dead in Christ may be resurrected and we, God's living elect, may be caught up with him into the air. Thus we, God's elect, may escape. If this be true, the seventieth week, predicted by Daniel may have begun. When Palestine was partitioned and the state or nation of Israeli was recognized by UN our president promptly recognized the Jews as a nation. Since Palestine was sacked, in the year 70 A. D., the Jews have existed as a people but not as a nation. So I say watch Palestine for the next seven years—it may be the last week (seven years) of God's dealing with the Jewish nation has begun. If this be true, the Lord Jesus will return to earth and set up His reign of 1000 years.

When He comes and establishes a world government, then and not till then we shall have peace—universal peace. Then and not till then we shall beat our swords into pruning hooks, etc. Then every knee will bow and every tongue will confess that He is King of kings and Lord of lords.' Think of these things and wait His coming. When asked **when** He would come, He said when **these things** begin to come to pass. The Jews, everywhere, are spoken of as a fig tree. He said "when the fig tree begins to bud ye may know that spring is nigh." The fig tree has begun to bud —when the Jewish nation was again recognized the tree began to bud. Spring may be (is) nigh. We are told in Zechariah that the entire world would gather to eliminate the Jews from the earth. I am glad our nation has never persecuted the Jews as a people. I am glad, too, that our president was the first to recognize the new Jewish nation. When the judgment of nations comes it will be said "inasmuch as ye have done it to the least of these, my brethren (Jews), ye have done it unto ME. This is not when individuals are judged, but **nations—all** nations will be judged, but Christians (God's elect) will **never** be judged except for rewards for deeds. We have been judged already and shall not come into judgment (condemnation); for Jesus was judged in our stead. He was judged for US and paid the redemption fee for us on the cross. I might easily write a book on "the signs of the time." But this must suffice.

G. S. Bryan

News and Comment

RED CROSS BLOOD CENTERS

With the steadily growing number of regional centers operating under the National Program of the American Red Cross, physicians and hospitals can look for steady improvement in the troublesome problem of securing sufficient blood for their practice.

Since the first of the year regional blood centers have been established by the Red Cross over a dozen cities, and at Charlotte, North Carolina, a blood center is scheduled to open in September. Other regional centers will be opened as local medical societies, hospitals, public health authorities and the Red Cross are able to complete community surveys to determine need.

Centers will be located in communities where needs are now being met adequately by existing blood banks and if they desire to become integrated into the National Blood Program, efforts will be made for them to do so.

Before a center is inaugurated, a careful survey is made to determine whether local blood needs are being supplied. A medical advisory committee, selected by the local medical society, conducts this survey in cooperation with hospitals and public health authorities. Centers are established only after the medical society and other interested groups are in agreement as to the need, and it has been determined that facilities are available and favorable to the successful operation of the center.

Unlike strictly local blood procurement programs in which some Red Cross chapters are participating, where the primary responsibility of the chapter is to recruit donors for some other sponsoring agency, the new national program provides for the recruitment of donors, collection, typing, processing and distribution of blood to hospitals and physicians.

All blood centers in the national program are conducted under the highest medical and technical standards. Each center is under the direct supervision of a physician and is staffed by graduate registered nurses and laboratory technicians. Medical and technical staffs are appointed under the direction and approval of each center's medical advisory committee, which is selected by the county medical society.

In addition to the guidance and counsel given by local medical societies, Red Cross draws upon the knowledge and experience of some of the country's topmost authorities in the field of blood. This help comes through the Blood and Blood Derivatives Committee of the National Research Council and is composed of outstanding physicians, surgeons and clinical pathologists.

Blood taken from donors at centers is tested for safe medical use, typed, and marked as to Rh factor and other pertinent data. It is stored under controlled temperature conditions and distributed to hospitals in accordance with need.

Mobile units are deployed from regional centers into surrounding suburban and rural areas. These temporary centers are operated by cooperating Red Cross chapters. Blood from these centers is taken to regional centers for processing and is then returned to hospitals of the communities from which it was drawn.

A short time before the expiration date of usefulness for transfusion purposes, blood on hand in hospitals is returned to the center and processed into plasma.

While the primary objective of the new program is to furnish essentially needed whole blood to physicians and hospitals for use in medical practice, it is ultimately to supply a variety of clinically proved blood derivatives. When the program has reached a stage where sufficient blood is available beyond the need for whole blood, a part of it will be diverted for fractionation. At that time the Red Cross will make contracts with reliable commercial laboratories for the processing of serum albumin, immune serum globulin, antihemophilic globulin and other derivatives.

The Red Cross will bear the entire cost of collecting, processing and distributing blood. Blood will be furnished physicians and hospitals without charge. The only cost to a patient receiving blood or blood derivatives through the program will be the medical or hospital fee in connection with its administration.

Hospitals which have already had the benefit of blood procured under the new program find that a ready-to-hand, stable supply of blood has reduced pressure on their laboratories and staffs in meeting the needs of their patients. Physicians also express gratification that they need no longer wait for haphazard donor recruitment and time-consuming typing of a number of donors when they require blood for patients.

ALABAMA SECTION OF I.C.S.

The Alabama section of the International College of Surgeons will meet in Birmingham, Thursday, September 30, in conjunction with the Jefferson County Medical Society and the Southern Research Institute. This will be a one-day meeting held in the Jefferson-Hillman Auditorium, starting promptly at 8 a. m.

The program, composed of speakers widely renowned in scientific fields includes **Dr. Herbert Acuff**, Knoxville, president of the United States Chapter of the International College of Surgeons; **Dr. F. Bayard Carter**, Duke University; **Dr. J. Barrett Brown**, St. Louis; **Dr. Albert A. Berg**, New York; **Dr. Allen Voshell**, Baltimore;**Dr. Edgar Davis**, professor of thoracic surgery, Georgetown University, Washington, D. C.;**Dr. J. U. Reeves**, Mobile, and **Drs. A. E. Casey** and **W. N. Jones**, Birmingham; and **Dr. William Dameshek**, Boston, who will discuss some aspects of leukemia in the evening session.

THE OUTLOOK FOR MISSISSIPPI

By mid-August, 1948, counties and communities over the state had either started construction or were awaiting approval of plans and specifications for the following projects:

A $48,700 clinic at Gloster; a $47,220 health center at Cleveland; a $30,780 health center at Vaiden; a $47,907 health center at North Carrollton; a $198,700 hospital at Okolona. a $180,000 hospital at Ackerman; a $70,249 health center at West Point; a $1,141,000 hospital at Clarksdale; a $598,000 hospital at Hazlehurst; a $229,100 hospital at Collins; a $45,000 health center at Meadville.

A $254,000 hospital at Meadville; a $266,000 hospital at Lucedale; $38,990 health center at Biloxi; $175,000 hospital addition at Lexington; $45,900 health center at Lexington; $246,200 hospital at Durant; $370,000 hospital at Belzoni.

A $246,200 hospital at Prentiss, a $1,313,500 hospital at Laurel; a $85,600 clinic at Ellisville; $253,100 hospital at DeKalb, $35,000 health center at Purvis, $576,000 hospital at Carthage.

A $305,880 hospital addition at Tupelo, $1,520,000 hospital at Greenwood, $138,000 health center at Greenwood, a $790,500 hospital at Columbia, a $50,073 health center at Holly Springs.

A $51,160 health center at Starkville, Sharkey-Issaquena health center contracted for $43,990, $226,800 hospital at Leakesville, $58,800 health center at Philadelphia, $326,300 hospital at Newton, $516,500 hospital at Macon, $369,000 hospital at Starkville, $842,500 hospital at Batesville, $609,550 hospital at Booneville.

A $28,050 health center at Brandon, $490,000 hospital at Forest, $215,600 hospital at Rolling Fork, $1,875,000 negro infirmary at Sanatorium, $177,000 hospital at Wiggins, $487,000 hospital at Indianola, $67,500 health center at Indianola, $267,000 hospital at Ruleville, $392,000 hospital at Ripley, $221,000 hospital at Tunica, $1,292,000 hospital at Greenville, $120,993 health center at Greenville, $228,800 hospital at Waynesboro, a $450,000 hospital at Centreville, and a $62,790 health center at Louisville.

These facilities will provide approximately 2000 hospital beds and 18 health centers for the state.

In its overall plan to improve hospital plant and personnel facilities, the state of Mississippi has three distinct programs underway. These three phases are aimed at providing doctors and nurses to staff the hospitals when they are completed and a method that will bring the facilities within financial reach of as many people as possible.

Medical Scholarships

The supply of doctors is being assisted through a unique plan of state-supported medical scholarship loans.

This program was inaugurated by the 1946 legislature, under the direction of the Medical Education Board. It provides loans to deserving young future physicians in an amount not to exceed $5,000.00 over a period of four years, or not to exceed $1,250 in any one school year.

Under terms of the contract, the young doctors promise to return to a rural community or area of 5,000 or less population and practice for a minimum of two years.

For each year of such practice, one fifth of the individual student's loan is wiped out. If he stays there for five years the entire loan is erased. As of August 30, 1948, such scholarships had been granted 144 medical students. Three had completed their medical training and had started practicing.

The Nursing Program:

To relieve the nurse shortage in the state and to provide adequate nursing personnel for future hospitals, the state established a department of nursing at the University of Mississippi with the beginning of the fall session of 1948.

The new department offers high school graduates a four-year course leading to a bachelor of science degree in nursing.

To provide qualified instructions for this and other nursing schools in the state, the 1948 legislature also inaugurated a program of state-assisted nursing scholarships, the first of its kind in the United States. Scholarships up to $3,000 are given deserving graduate nurses for advanced study in colleges and universities offering advanced nursing education. In return, they must agree to come back to Mississippi and serve as instructors in schools of nursing a minimum of one year for each year of their scholarship. For each year of instruction at an approved school of nursing, the debt is reduced by $1,000.00. An appropriation of $85,000.00 will finance the program for two years and provide scholarships for 42 students at $1,000 a year.

The Blue Cross Plan

To place hospitalization within reach of all levels of the population, the 1946 legislature, through House Bill 430 created a commission of six persons whose duties would include promotion of a voluntary hospitalization program in Mississippi.

The Blue Cross Plan, a voluntary prepayment plan for hospital and surgical bills, was established. Hospital Commission officials believed subscription to this low cost type of insurance would make use of the proposed new hospitals available to even the lowest income group in the state. Blue Cross was promoted by the same community leaders and civic clubs who promoted the hospital construction projects.

As of August 30, Blue Cross insurance contracts had been issued to 10,000 families covering 25,000 individuals.

MISSISSIPPI G AND O SOCIETY

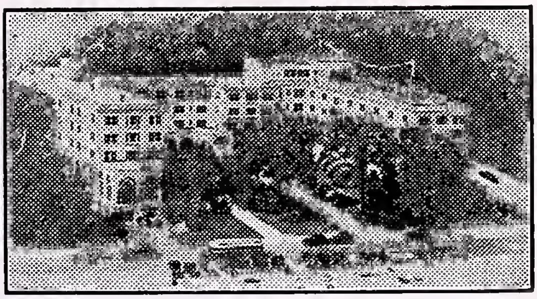
On October 21 the Mississippi Gynecological and Obstetrical Society will have its semiannual meeting in Vicksburg at the Plantation Room of the Old Southern Tea Room, and the guest speaker will be **Dr. Phil Schreier**, Associate in Obstetrics at the University of Tennessee, who is quite well known throughout this area. The meeting will start at 7:30 p. m., Dr. Walter Simmons presiding.

Any physician who wishes to make a reservation can do so by sending a check for $2.50 to Dr. Frank Berry at 1915 Northwest Street, Jackson, Mississippi, or Dr. R. A. Street, Jr., Vicksburg.

ANNOUNCEMENTS

Frank J. Baird, M. D., announces the opening of his office at Columbus Hospital, Columbus, Mississippi, in association with H. H. McClanahan, Jr., M. D., practice limited to internal medicine.

The thirteenth assembly and convocation of the United States Chapter, International College of Surgeons will meet at the Kiel Auditorium in St. Louis, Missouri, Monday through Saturday, November 15-16-17-18-19-20.



Buena Vista Hotel. Headquarters for the Mississippi State Hospital Association of October 18 and 19, and for the special meeting on Wednesday. It has delightful conveniences and the service is most courteous.

Dr. W. H. Parsons of Vicksburg, Miss., is president of the Mississippi State Hospital Association. He is an outstanding surgeon and an able leader in organized medicine.

EXHIBIT AT AMERICAN MEDICAL ASSOCIATION

(See photos on advertising page 15)

The consultant program in South Mississippi, being conducted jointly by the Tulane University School of Medicine and the Mississippi State Board of Health in the field of pediatrics and obstetrics, was the subject of an exhibit which attracted wide attention at the meeting in June of the American Medical Association. This consultant program which is a similar program carried out in previous years by obstetricians and pediatricians of other nearby medical schools over the past 20 years for the post-graduate instruction of physicians and of county health department staffs in Mississippi, has been in continuous operation in south Mississippi for the past ten months.

At the invitation of the Committee on Rural Health of the American Medical Association the exhibit pictured above was prepared. Since it was prepared at the request of the American Medical Association, the expenses of its preparation were met by this national medical organization, as shown by a photostatic copy of the check, also pictured above. Similar programs in the field of obstetrics and pediatrics in north Mississippi have been carried out jointly with the interest and cooperation of the dean and faculty of the University of Tennessee in recent months.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PATHOLOGY

Statistical and Histological Study of 120 Canine Neoplasms. Mulligan, R. M.—*Archives of Pathology,* 45: 216, 1948.

During the past three years 120 tumors occurring spontaneously in 98 dogs have been studied by Mulligan in the Department of Pathology, University of Colorado School of Medicine. The great majority of tumors were submitted for diagnosis by Dr. L. R. Phillips, who obtained them in veterinary practice in Denver, in the surgical treatment of canine pets.

Of the 98 dogs with 120 tumors, 80 were 6 years of age or older. The greatest incidence occurred in the 9th and 10th years when 27 cases were noted; while during the 9th to 14th years inclusive, 61 dogs were found to have one or more tumors. There were 50 males and 48 females. The breed in 45 dogs was terrier (Boston, 15; Fox, 11; miscellaneous, 19), in 15 shepherd, in 12 spaniel (Cocker, 10; English springer, 2), in 3 collie, in 3 Pekinese, and in 3 Chihuahua; the remaining 17 dogs were of miscellaneous breeds. The author makes no effort to explain the high incidence of tumors in terriers. However, in view of the fact that more Cocker spaniels were registered by the American Kennel Club in 1947 than any other breed (approximately 76,000), and the nearest competitor was the beagle (approximately 23,000 registrations),* it is reasonable to assume that terriers are more in favor than Cockers in the Denver vicinity.** Eighty-three dogs had 1 tumor, 9 had 2 tumors, 5 had 3 tumors, and 1 had 4 tumors. Fifty four of the 120 tumors were malignant as follows: 24 were sarcomatous, 24 were carcinomatous, 4 were seminomas, and 2 were pigmented melanomas. Of the 66 nonmalignant (benign) tumors there were 28 adenomas, 12 papillomas, 9 mixed tumors, 7 nevi, 3 lipomas, 2 fibromas, 2 neuro-fibromas, 2 myxomas, and 1 epidermal cyst.

The author makes no attempt to differentiate between the sites or origin of malignant and benign tumors. The location of the 120 tumors is as follows: 46 were in the skin, 24 were in subcutaneous tissues, 23 were in the mammary glands (10 being in the fourth gland), 11 were in the perianal tissues, while the remaining 16 tumors were miscellaneously situated.

It has long been known that the incidence of tumors in dogs is as great as it is in humans; that the distribution and histological structure of canine tumors is similar to that in man; but it is surprising to note the high incidence of sarcoma in dogs (approximately 45 per cent of the malignant tumors), as reported by Mulligan. The 24 sarcomas in his series were classified as follows: 9 were lympho-sarcomas, 9 were mast-cell sarcomas, 2 were fibrosarcomas, 2 were neuro-fibro-sarcomas, 1 was a chondro-sarcoma, and the remaining case was a lymphangio-sarcoma. The 24 carcinomas were classified as follows: 7 were squamous cell carcinomas, 5 were basal cell carcinomas, 5 were medullary carcinomas, 4 were adenocarcinomas, 2 were sebaceous gland carcinomas, and the remaining case was an interstitial cell carcinoma of the testis.

The data reported by Mulligan seems to coincide with that of his numerous references.

PEDIATRICS

Pentothal for Tonsillectomy in Children—Samuel L. Fox and Sylvan M. Shane, South Baltimore General Hospital, Baltimore, Md.—Southern Medical Journal 40:848-51, October 1947.

"Sodium pentothal-nitrous oxide-oxygen anesthesia was used for tonsillectomy performed on 35 children from the ages of 2 to 10 years. A test dose of 1 or 2 cc. of 2.5 per cent pentothal was first given intravenously

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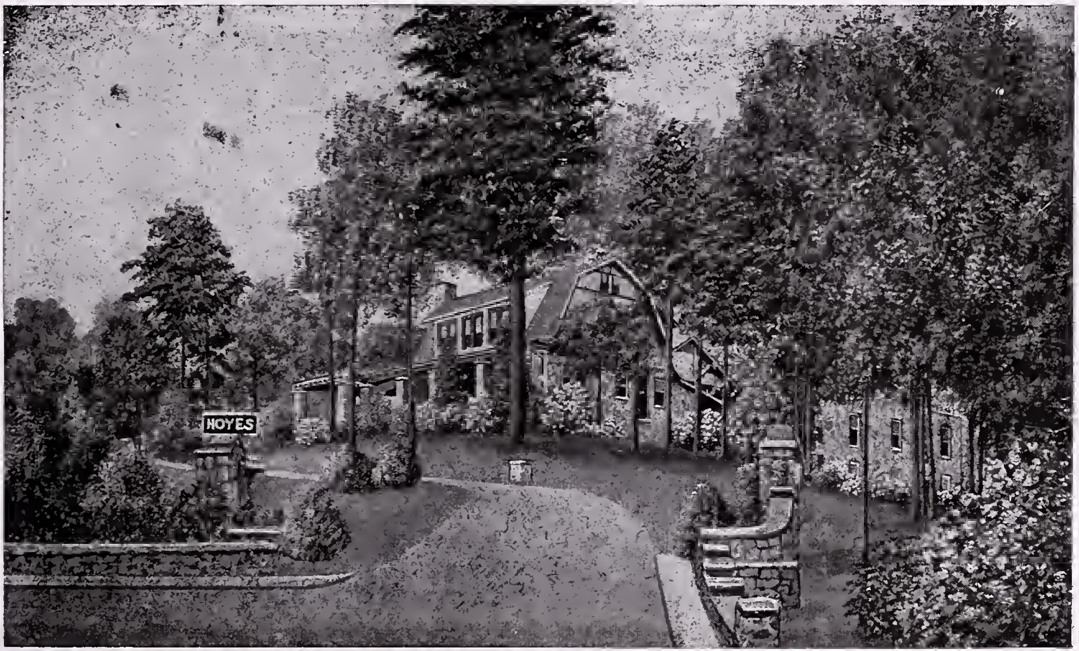

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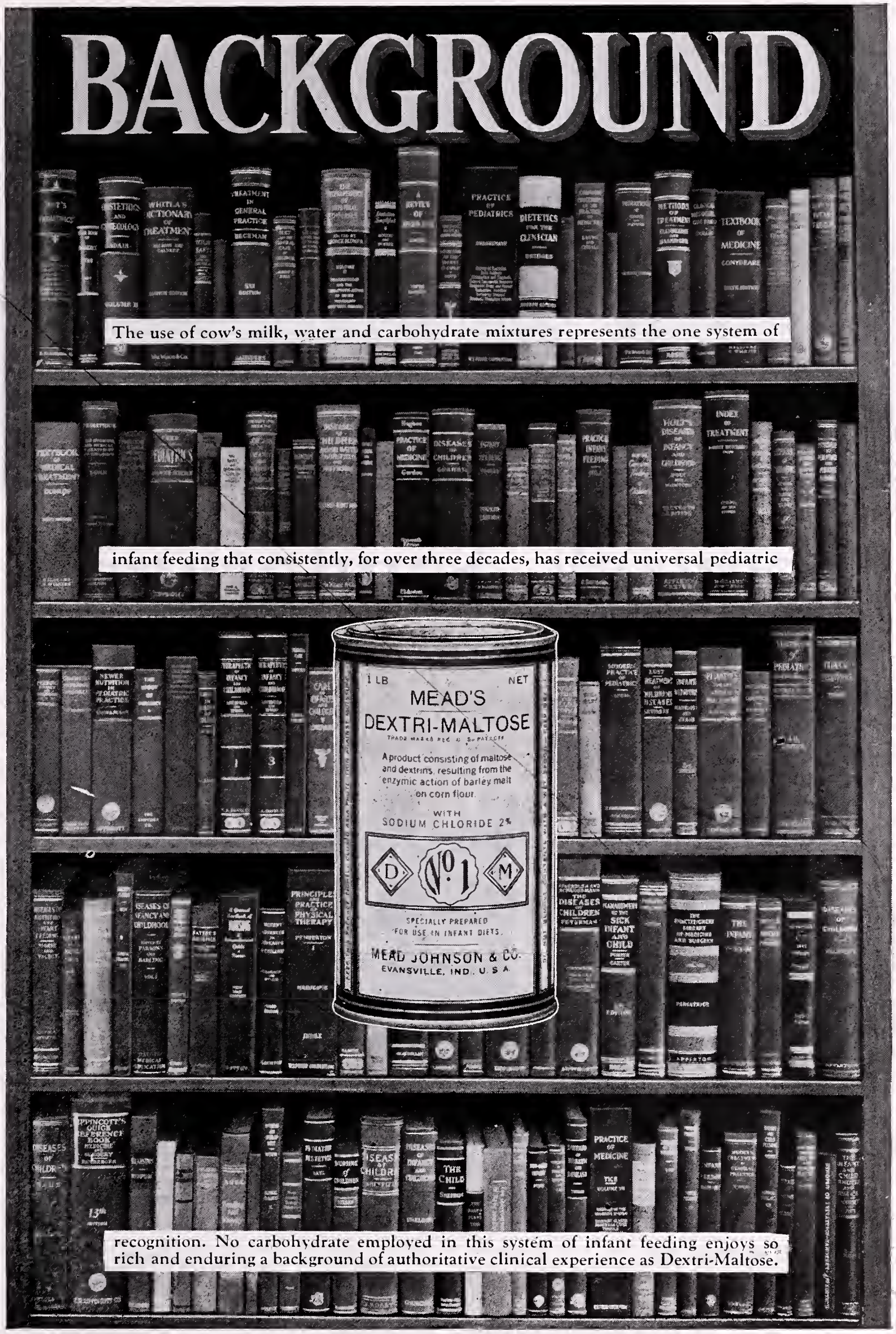
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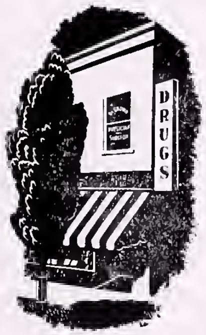

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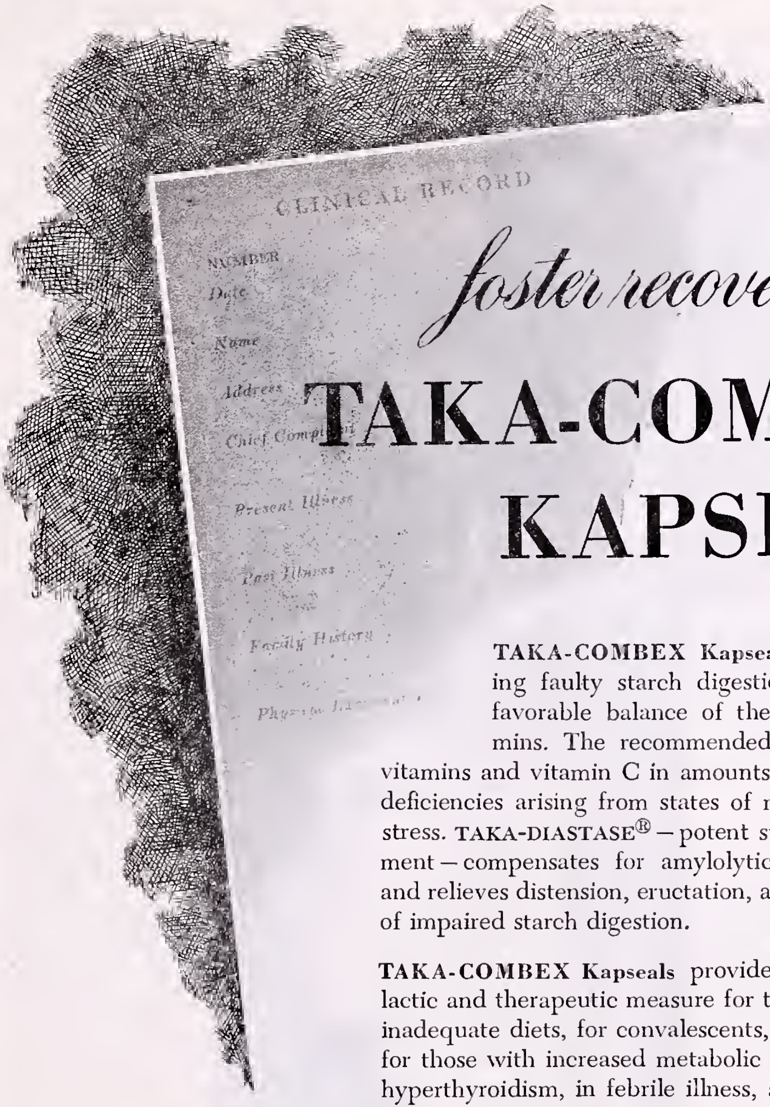

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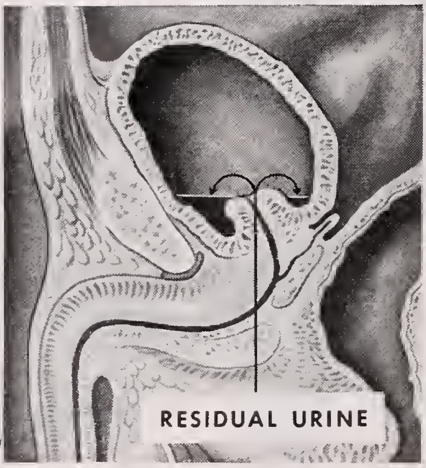

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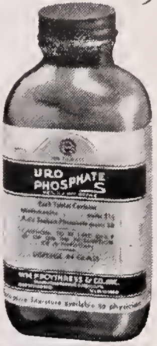

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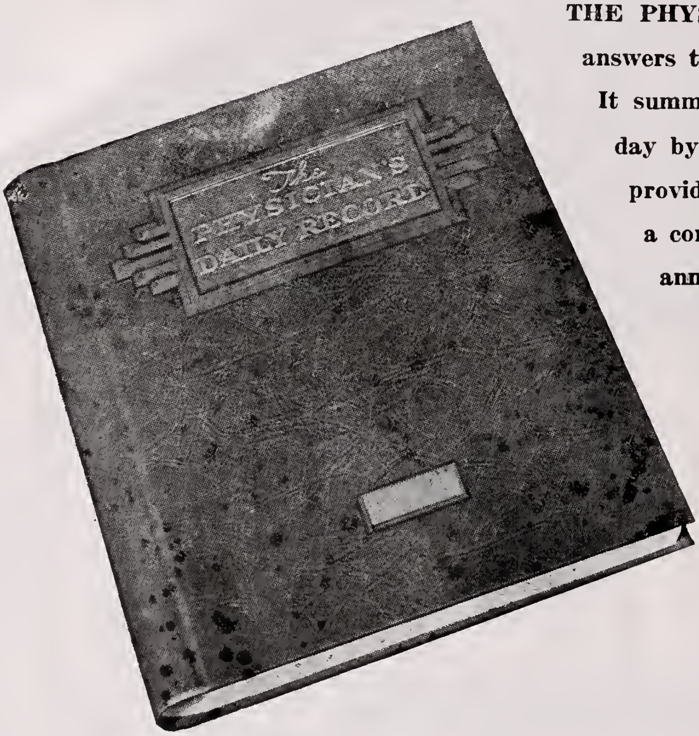

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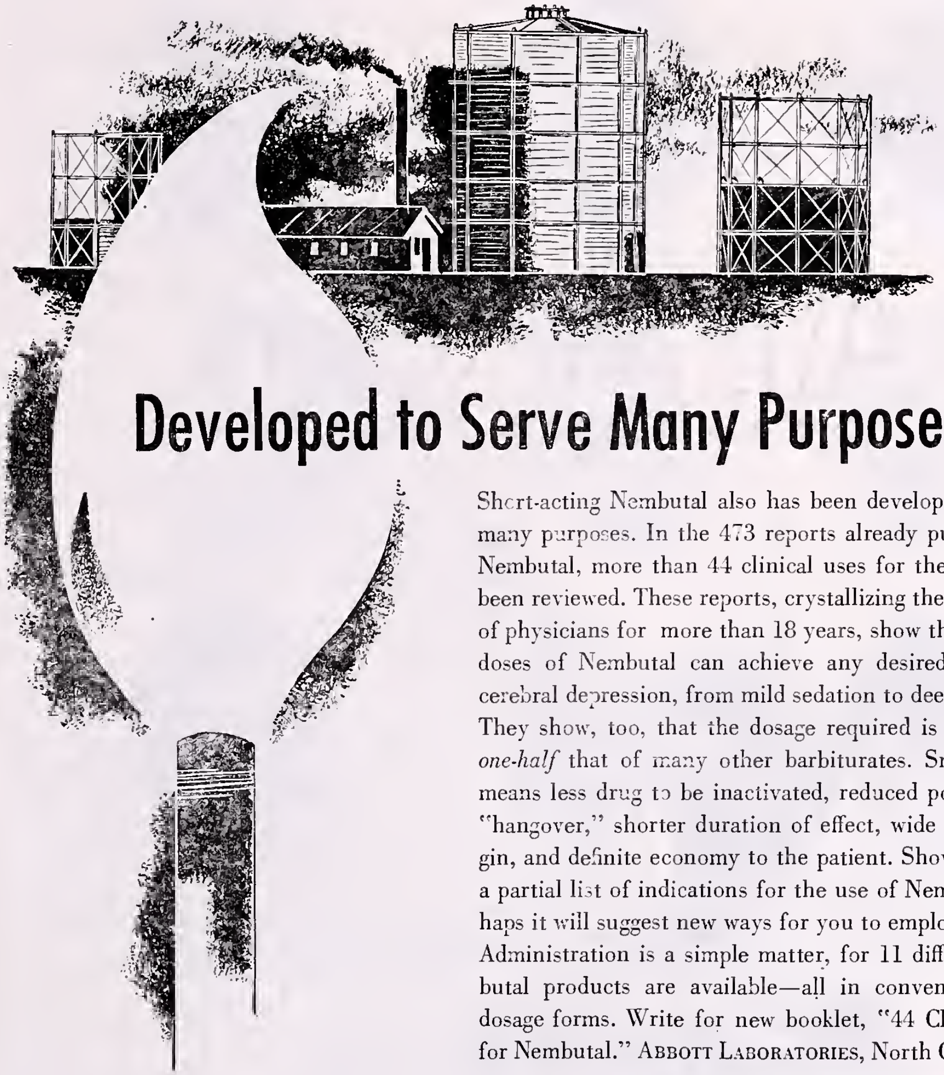

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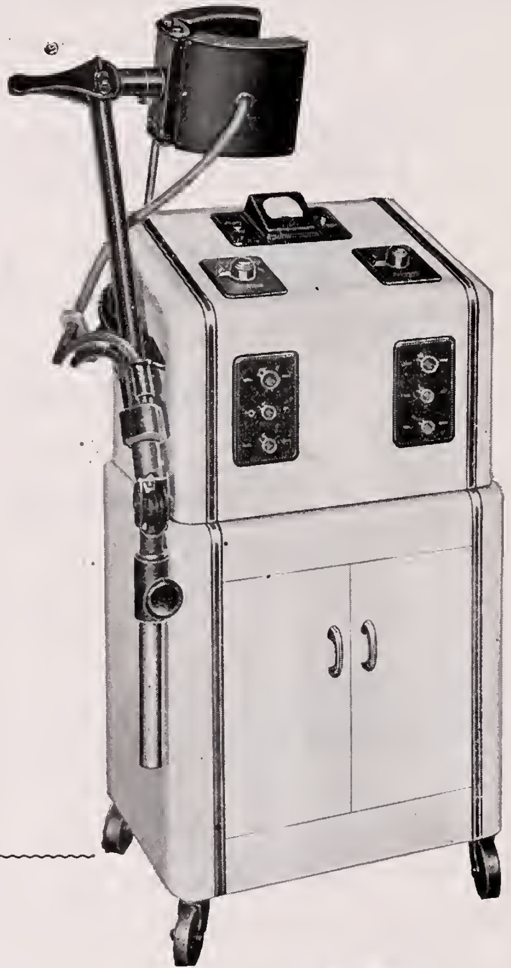

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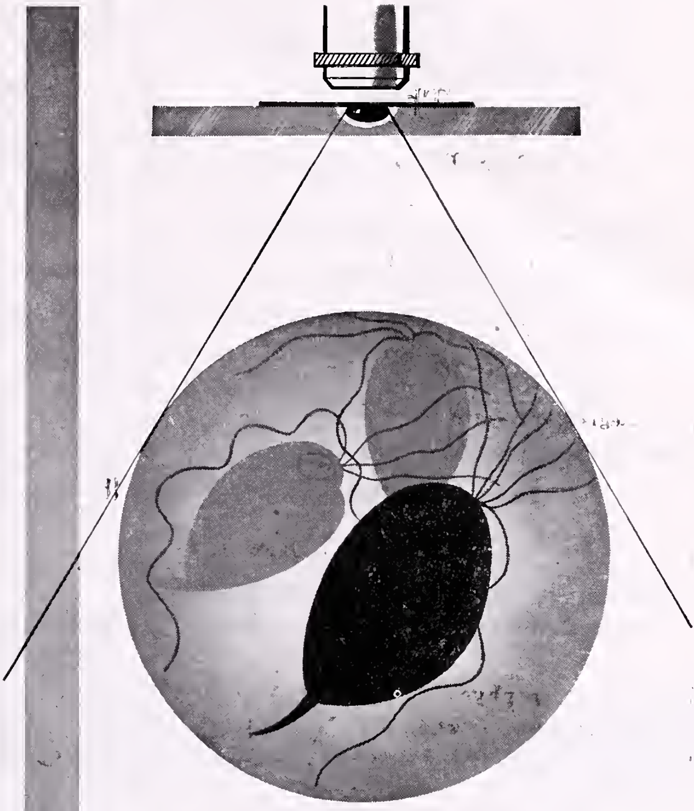

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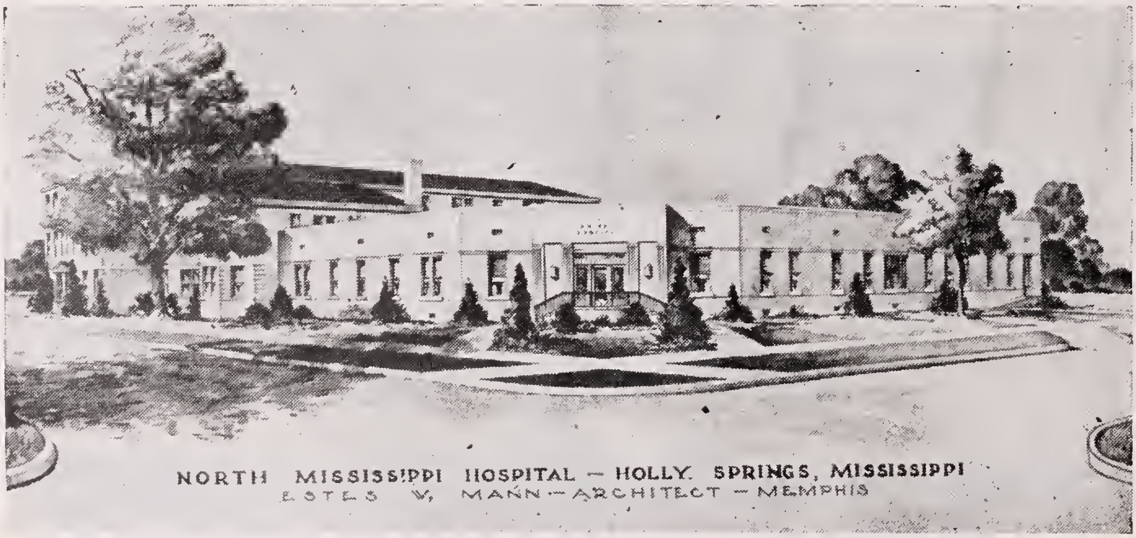
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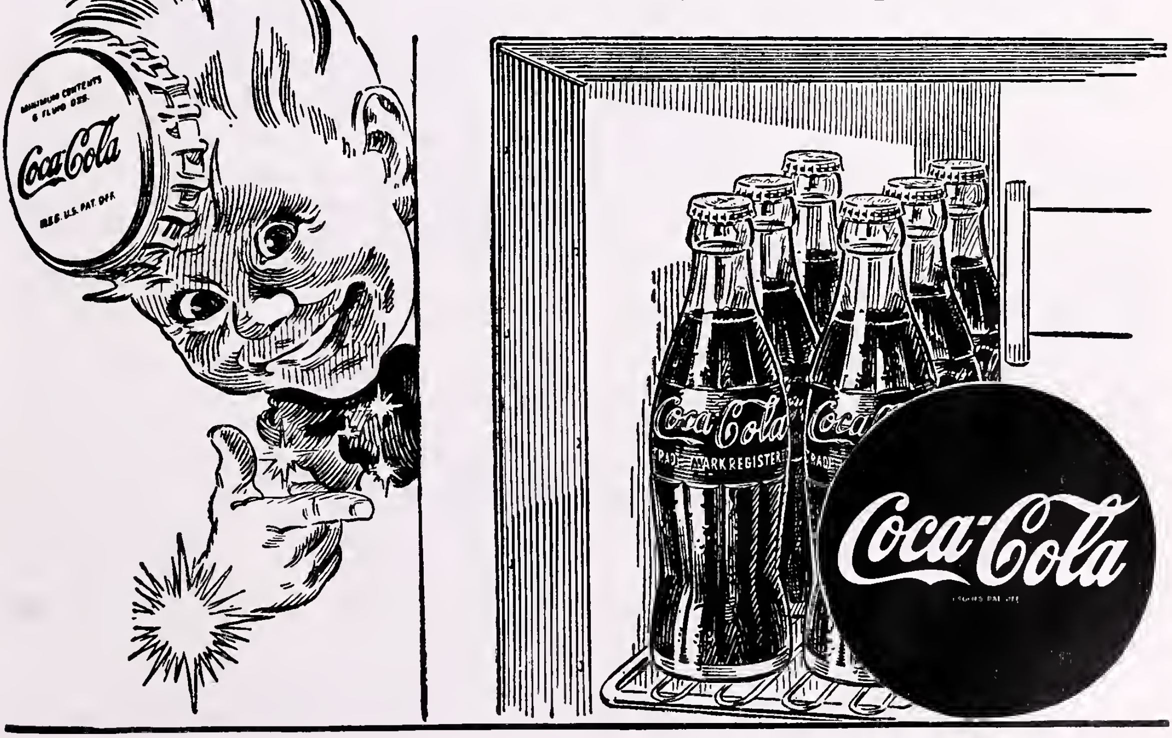
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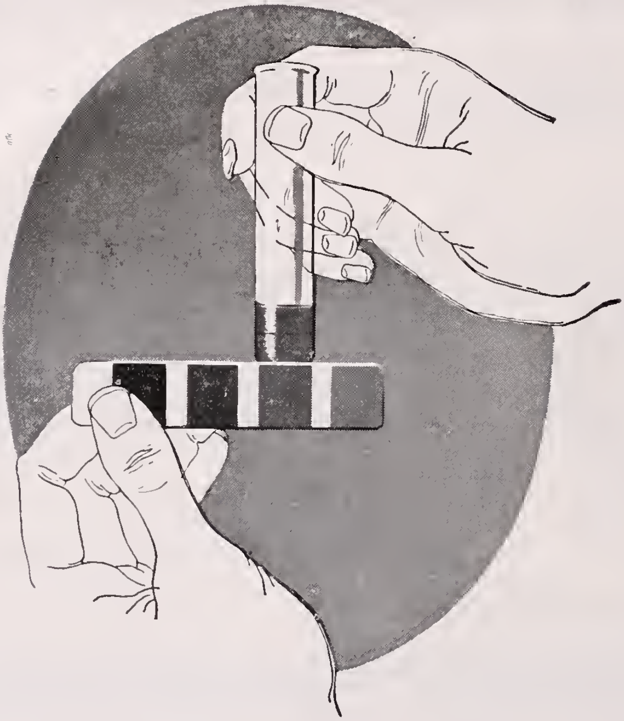

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Salmonella Meningitis: Review of the Literature and Report of an Additional Case Due to Salmonella Typhi-Murium (Aertrycke).

W. D. DUNAVANT, M. D.
Pontotoc, Mississippi

ONLY 15 cases of meningitis arributable to **salmonella typhi-murium** have been reported in literature. The case presented here is believed to be the first in the literature of this country.

In addition to presenting this unusual case, the literature covering approximately 100 cases of Salmonella meningitis is being reviewed. The incidence of infection may be higher than is thought now, and the mortality rate is known to be high.

REVIEW OF THE LITERATURE

The first case of Salmonella meningitis was reported by Sumners and Wilson (1908), who obtained Gaertner's bacillus from a purulent meningitis. The diagnosis was established by both agglutination and absorption tests. In a later case described by Arzt and Bose (1908), the organisms were agglutinated by paratyphoid B serum; in another case, caused by morphological paratyphoid B, the reaction was negative. The diagnosis in about half the cases reported later was established by agglutination and absorption tests.

Of the fifteen cases in literature of meningitis due to **Salmonella typhi-murium** Aballi et al. (1937) collected twelve cases of the infection in infants. The nervous system was affected in all but in only nine was there a true meningitis. Guerra et al. (1940) collected four more cases and added one of their own. Table I summarizes the cases of Salmonella meningitis in literature.

TABLE I

Cases of Salmonella Meningitis in Literature

Group	*Type*	*No. of Cases*	*References*
A	S.paratyphi	2	Echert (1910), Tolmer & Weisenbach (1915),
B.	S.schottmuelleri	18	Anderson (1932), Arzt and Bose (1908)
	(S.paratyphi)		Barhenburg and Echer (1937), Bradhy (1925), Caselli (1939), Gordon and Kennedy (1938), Hundeshagen (1918), Jundell (1932) Lesne (1920), Lundhardt (1937), Massengale (1946), Patterson (1942), Schmidt (1938), Voigt (1922), Walterhofer (1917).
	S.typhi-murium (S.aertrycke)	15	Abelli et al. (1937), Guerra et al. (1940), Guerra et al. (1940a), Marcos and Meduvil (1940), Santiazo (1938), Welcher and Vogl (1938).
	S.Sandiago	1	Bray and Meredith (1942).
C.	S.cholerasuis	8	Boycott and McNee (1936), Clifton and Weiner (1938).
	(S.suipestifer)		Guerra *et al.* (1940), Kuttner and Zepp (1932). Materna and Januschke (1924), Neter (1944). Ravitch and Washington (1937).
	S.Orienienburg	2	Edwards and Bruner (1944) Hollis and Burran (1944).
	S.Manhattan	1	Janney et al. (1947).
D.	S.enteritidis	35	Crozier (1921), Guthrie and Anderson (1941).
	(S.enteritidis) Gaertner)		Guthrie and Montgomery (1939, Guerra et al. (1940 a) Kayasaha (1933) Lynch and Shelbourne (1930), Meyer - Rohn (1940) Opitz (1919), Rupner (1933), Smith (1921) Stuart and Kirkerian (1926), Summers and Wilson (1908), Tomic-Karovic and Kovacevic (1944), Walterhofer (1917).
S.	sp.(Panama type)	4	Guerra et al. (1940 a), Katsampr and Bradford (1940), Wood et al. (1945).
S.	sp.(Eastbourne Type)	2	Guerra et al (1940 a).

From the Division of Pathology and Bacteriology, University of Tennessee College of Medicine, Memphis

S. erteritidis (var Dublin)	6	Guthriee and Montgomery (1939. Guerra et al. (1940 a).
S. enteritidis (var. Kiel)	1	Vallendor et al. (1942).
S. enteritidis (var. Jena)	3	Wengler (1940).

A five-month-old colored boy was admitted to the hospital with a cough of five days' duration and diarrhea. The illness began with fever and eight to ten loose yellowish stools a day. The cough which had been slight for three weeks became severe with the onset of the illness and the child had become irritable, refusing to nurse but not vomiting.

Past history revealed a normal home delivery by a physician. The infant, the eighth child, was bottle fed but on no regular schedule. Orange juice was given daily but no codliver oil.

The child, weight ten pounds and eight ounces, was well developed but undernourished, in a stuporous condition and markedly dehydrated. Temperature was 106^0 F. The eyes and anterior fontanels were sunken. There was a slight stiffness of the neck but results of further examination were negative. The deep reflexes were absent.

Results of urinalysis were sugar and albumin both 2 plus, pH 6.6. Microscopic uric acid crystals were present. Examinatiton of the blood showed 3,850,000 red cells per cu. mm. with a hemoglobin content of 11 gm., and 14,000 white cells of which 4 per cent were metamyelocytes, 17 per cent N. nonfilamented, 55 per cent N. filamented leukocytes, 22 per cent lymphocytes, 1 per cent basophils and 2 per cent monocytes. There were no sickle cells. The carbon dioxide combining power was 40 volume per cent. Kahn reaction was negative. The liquid greenish stool contained an occasional leukocyte or erythrocyte. Stool cultures were made but results were negative.

Penicillin and oxygen were begun immediately, and plasma, alkali and glucose given intravenously. The child improved remarkably. His temperature was normal after forty-eight hours and by seventy-two hours he appeared well hydrated. However, all extremities were slightly spastic and a fine tremor was noticed in the upper extremities. The fontanels were normal, the pharynx slightly hyperemic. Improvement continued and the patient was discharged after seven days with a diagnosis of diarrhea of undetermined etiology.

Four days after discharge the child had fever and was irritable but continued to nurse well. These conditions were followed the next day by a high fever, an apparent stiffness of the neck and jaws, refusal to nurse and vomiting. On readmission to the hospital the neck was found to be hyperextended and stiff, and the fontanels slightly tense. There was opisthotonos of the trunk and absence of the superficial reflexes.

Immediately after readmission the child was given 40 mgm. of streptomycin intrathecally and 30 mgm. intramuscularly every three hours, and also 32 gm. of sulfadiazine intravenously. This was repeated every morning. Despite the treatment the child died in thirty-six hours.

Bacteriology—The spinal fluid obtained by lumbar puncture was cloudy with 138 cells per cu. mm. of which 78 per cent were neutrophils and 22 per cent lymphocytes. The protein content was 216 mgm. per cent, sugar 14 per cent. The white blood cell count was 3350, 56 per cent being lymphocytes.

Cultures of the spinal fluid contained a gram-negative motile rod which produced acid and gas on dextrose, manite, maltose, xylose, trehalose, and rhamnose. Results were negative at forty-eight hours on arabinose, dulcitol, inoside, lactose, sacchrose and gelatin. The reactions to citrate and lead acetate were positive. The organisms were agglutinated by Lederle's Salmonella diagnostic sera, Group B.

Necropsy—The brain was covered with a greenish purulent exudate which consisted largely of polymorphonuclear leukocytes with an occasional lymphocyte. Cultures of this exudate were found to give similar results to those of the spinal fluid. The convolutions of the brain were narrowed and the ventricles slightly dilated. Weight of the brain was 880 gm. No lesions were noted in the microscopic sections of the brain though there was a slight dilation and congestion of the small blood vessels, and the purulent meningitis.

There was a gaseous distention of the gastrointestinal tract but no lesions were found in the microscopic sections. The mesenteric glands were not enlarged. Some pulmonary edema and congestion were noticed as well as acute congestion of the spleen.

DISCUSSION

The pathogenesis of Salmonella meningitis is not clearly understood. In some cases described the meningitis is a primary infection, in others, secondary and there are cases of mixed infections. In 80 per cent of the cases there was a history of preceding enteritis or some abnormality of the intestinal tract was noted at autopsy, usually enlarged mesenteric nodes. The meningitis in the case reported here may have been secondary to the enteritis for which the patient was first hospitalized but since the causative organism of the enteritis was not determined there is no assurance that **Salmonella typhi-murium** was present at that time.

Smith (1921) reported a case in a five-week-old baby of Gaertner meningitis following Gaertner enteritis. At necropsy the organisms were found in the intestinal contents, liver, spleen, blood and pus covering the meninges. Paratyphoid B was considered the primary cause in one case discussed by Patterson (1942) who also, in another case, obtained positive reactions to a Widal test and stool cultures a week before the onset of meningitis. Both patients were treated with sulfapyridine and recovered.

Guthrie and Montgomery (1939) reported thirteen cases of infection with **Bacterium enteritidis** in infants, with the triad of enteritis, cholecystitis and meningitis. One case was attributed to the var. **Dublin** and followed an enteritis. The organisms were cultured from the meninges, gallbladder, spleen and Peyer's patches. An enteritis was found at autopsy in ten cases attributed to the enteritidis bacillus.

As in typhoid the gallbladder may play a role in the chronicity of Salmonella infections and predispose to meningitis. This was noticed in eleven cases discussed by Guthrie and Montgomery (1939) and a case by Boycott and McNee (1936) of a woman, thirty-five years of age, who had been ill for two months preceding the onset of meningitis. **Salmonella suipestifer** was isolated from the blood before death, and at autopsy, from the meninges, spleen, gallbladder and a thrombus in the heart. Wilson and Gibson (1941) isolated the organism from the ileum and gallbladder. Both Bahrenburg (1937) and Echert (1910) noticed enlarged red mesenteric lymph nodes and some enlargement of the spleen following cases of a mild enteritis.

Jundell (1932), in the case of a breast-fed baby, obtained paratyphoid B from cultures of the spinal fluid though stool cultures gave negative results. Paratyphoid B was cultured from the mother's stool and in the milk there was a trace of agglutination of paratyphoid B. The day before the meningitis developed there was some vomiting and the stools were thin. Aside from the purulent meningitis, autopsy revealed a fresh ulcer with sharp edges in the duodenum near the pylorus. The lymphatic glands of the ileum and colon were swollen slightly but there were no lesions. The mesenteric glands were red and about the size of peas. The spleen was fairly large and firm. No mention was made of cultures from these areas.

A case of paratyphoid B meningitis was seen in a soldier, aged twenty years, who developed meningitis five days after beginning to convalesce from a paratyphoid B enteritis, (Walterhofer, 1917). Meningitis developing two months after the onset of paratyphoid fever is reported by Storey (1938) in a man twenty-three years of age. Stool cultures showed the presence of paratyphoid B both before and after the meningitis. Blood agglutination tests for paratyphoid B were positive in dilutions of 1:160. The etiology of the meningitis was not established however since cultures of the spinal fluid yielded a gram-negative diplococcus larger than a meningococcus.

Salmonella Panama was obtained from stool and spinal fluid cultures in two cases described by Wood, Mayfield and Frisch (1945). One patient died but no autopsy was performed.

In the case reported here as in others there was a history of a preceding enteritis but, at autopsy, the intestinal tract was found to be normal. Anderson (1932) and Hundeshagen (1918) both described cases of paratyphoid B meningitis following an enteritis but also found a normal intestinal tract. Similar cases were reported by Barhenburg and Echer (1937) and Brahdy (1925). In a case of **Salmonella Manhattan** in a month-old child Janney (1947) stated that the meningitis developed after three weeks of a persistent diarrhea. This child recovered. Guthrie and Anderson (1939), Hollis and Burran (1944), Gordon and Kennedy (1938), Meyer-Rohn (1940) and Summers and Wilson (1908) all reported cases that may be considered primary Salmonella meningitis, and in which the intestinal tract was found, at autopsy, to be normal.

Mixed infections have been seen in seven cases described by Guthrie and Anderson (1941), Opitz (1919), Welcher and Vogl (1938), Ravitch and Washington (1937), and Appelbaum (1925). The Salmonella meningitis was considered secondary to and mixed with a meningococcus meningitis. Ravitch and Washington (1937) found a meningococcus septicemia and meningococcus meningitis in a girl, four years of age. **Salmonella suipestifer** was isolated from the blood on the second hospital day and from the spinal fluid on the fourth. However, the authors thought the spinal fluid might have been contaminated with blood during the initial spinal puncture. Echert (1910) in the report of a case stated that both pneumococcus and paratyphoid B were isolated from the blood before and after death, but paratyphoid B only was isolated from the spinal fluid.

The majority of cases indicate the gastrointestinal tract as the portal of entry, followed by invasion of the blood stream and localization in the brain. However in only two cases was the organism cultured from the blood. Also there is the possibility that the intestinal lesions seen in some cases were the result of a septicemia rather than a primary infection. In the case reported here there was thought to be a septicemia with localization of the organism in the meninges following the enteritis. However this was not proved.

Many cases of Salmonella meningitis indicate an ingestion of the organisms, possibly in water or milk. Wood and Mayfield (1945) thought the infection in two cases was milk borne since the organisms were isolated from an attendant in the milk laboratory of a hospital, and from stools of other infants in the same hospital. Crozier (1921) described a case in which the infection was thought to be milk or water borne. Schmidt (1938) and Jundell (1932) found two cases in which the mother harbored the same organism found in the child. Wengler (1940) attributed three cases following an outbreak of **enteritis** var. **Jena** to uncooked meat but could not prove this fact. Occasionally the meningitis occurs in epidemic form as in nine cases reported by Aballi **et al** (1937) and eleven by Guthrie and Montgomery (1939). In the latter group the infection was apparently milk borne, all occurring in a maternity hospital.

One of the most striking facts about Salmonella meningitis is the tendency to affect children and infants. Of the ninety-seven cases studied 60 per cent were under six months of age; 25 per cent from six months to one year; 7 per cent from one to two years; 4 per cent from four to ten years; four per cent in adults.

The incidence of recoveries, ten in ninety-six cases, is an indication of the high mortality rate and the lack of success in treatment of this infection. Of the ten cases, four were given sulfonamides, one sulfonamides and streptomycin, one streptomycin and four only symptomatic therapy. Death occurred in three receiving streptomycin and eight receiving sulfonamides. No recoveries have been reported from the use of penicillin, and apparently it has no beneficial effect.

Patterson (1942) reported recoveries of two infants with paratyphoid B meningitis following the use of sulfathiazole and sulfapyridine but felt that neither drug was specific. A similar case was discussed by Katsampr and Bradford (1940). Sulfadiazine was used in treating two infants with Salmonella Panama meningitis. (Wood, Mayfield and Frisch 1945). One infant recovered but the other died with an internal hydrocephalus. A recovery was reported by Janney (1947) following treatment of Salmonella Manhattan meningitis with both sulfadiazine and streptomycin. Lyon and Folsom (1941) also reported recovery from Salmonella suipestifer meningitis following treatment with sulfonamide. The diagnosis was not substantiated however. Clifton and Weiner (1938) isolated **Salmonella suipestifer** from a subdural abscess. The patient recovered following surgical drainage of the abscess. Supportive therapy was used in the treatment of a purulent meningitis complicating paratyphoid fever but the diagnosis of paratyphoid B meningitis was not established. (Storey, 1938). Also in the cases discussed by Ravitch and Washington (1937) and Walterhofer (1917) recovery followed the use of supportive therapy. Streptomycin was used in a recovery reported by Barnes (1946). Intraspinal injections of Solgonal (gold preparation) were used successfully in a case of purulent meningitis due to **Salmonella Morgani**, (Bier and Lange, 1936).

Antibiotics in the treatment of Salmonella infections, especially meningitis, cannot be evaluated correctly without further study. Bornstein and Straus (1941) found sulfaguanidine to be effective against only two members of the Salmonella group, **paratyphi** A and **cholerasuis**. Wood **et al.** (1945) reported

Salmonella Panama on ordinary culture media to be resistant to sulfathiazole and sulfadiazine in concentrations of 20 mgm. per 100 cc. Since favorable results were obtained from treatment with both sulfathiazole and sulfadiazine further studies were made by a quantitative method. During the early golarithmic growth phase the two strains studied were affected very slightly by the presence of 5 mgm. of sulfadiazine per 100 cc. but by the end of sixteen hours there was a 50 per cent reduction in numbers in one culture and 80 per cent in the other.

Resistance tests were made with **Salmonella typhi-murium** obtained from our patient, against sulfadiazine, penicillin, streptomycin and **para**-aminobenzoic acid (PABA). Growth was completely inhibited for forty-eight hours by streptomycin in concentrations of 50 units per cc., and also inhibited by **para**-aminobenzoic acid in concentrations of 25 mgm. per cc. No inhibitory effects were noted with sulfadiazine, 25 mgm. per cc., or penicillin in concentrations as high as 1 Oxford unit per cc. These results indicate some benefit from the use of streptomycin and para-aminobenzoic acid in the treatment of Salmonella infections. The results with para-aminobenzoic acid are interesting since no literature could be found on this subject. The child in our case received 500,000 units of streptomycin but was moribund at the time. There might have been some benefit with earlier hospitalization and treatment.

SUMMARY

A case of meningitis due to **Salmonella typhimurium** is presented, with necropsy findings. Resistance tests were made with the organism against streptomycin, para-aminobenzoic acid, sulfadiazine and penicillin. **Salmonella typhimurium** was found to be sensitive to and inhibited by streptomycin and para-aminobenzoic acid but resistant to high concentrations of sulfadiazine and penicillin.

The literature on Salmonella meningitis is reviewed with comments on the sources and pathogenesis of the infection.

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MARCH OF TIME

The latest "March of Time" films tells a story of voluntary hospital service. The movie, "The Case of Mrs. Conrad," traces modern medical and hospital procedure in the story of Mrs. Conrad, who goes to the hospital for an operation.

Some of the aspects of procedure shown are hospital plan benefits, the taking of a medical history, hospital laboratory work, and pre-operative care.

As a public relations service, the Blue Cross Commission will supply, on request, dates when the film will be shown locally. In addition the commission expects to have some 16 mm. prints available for loan some time this month.

The Care of the Premature Infant*

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IMPROVEMENTS IN THE CARE of the premature infant have not kept pace with the general reductions in mortality rates of infants in the past two decades. There has been a great decrease in deaths from diarrheal disorders, respiratory and other acute infections, and a marked improvement in the nutritional status of children. The sulfonamides and antibiotics, and widespread immunization have further improved the child's chance of survival. Nevertheless, against this backdrop of better health looms darkly the startling premature mortality rate of the country at large. For example, in 1941, 46 per cent of the 69,559 deaths within the first month of life were due to prematurity, with its various complications.[1] That many of these deaths could have been prevented is shown by the fact that wherever special attention has been paid to the care of the premature infant the mortality rates have dropped accordingly. There is nothing strange or exceedingly difficult about the technic of caring for the premature, but many persons approach these smaller forms of life with apprehension and a defeatist attitude that they are too tiny to survive. Such an attitude needs to be corrected by healthy optimism based on a better understanding of the physiologic handicaps of prematurity, and careful application of the simple fundamentals of caring for the premature baby.

It is the purpose of this paper to condense for the general practitioner some of the present-day concepts concerning the proper care of the premature infant. The application of these well-established principles will serve to reduce the mortality rates to an acceptable level. There will still remain an irreducible minimum of deaths due to prematurity, for no amount of medical and nursing care will salvage some of these undeveloped infants. The real solution to the problem of the premature is the prevention of prematurity itself by all methods of careful supervision of the health of the pregnant woman which have been shown to be effective in preventing premature delivery. Among these preventive measures are proper diagnosis and treatment of various infections during pregnancy, adequate diet, sufficient rest, and proper treatment of any threatened premature delivery. If the mother's condition is not a contraindication, every effort must be made to prolong her pregnancy so that the child will receive the benefits of as much of its full term of intrauterine existence as possible before facing the world.

PHYSIOLOGIC HANDICAPS OF THE PREMATURE INFANT

The premature infant labors under certain handicaps which the inherent in the immature development of various organs and functions. A knowledge of these handicaps forms the foundation for intelligent treatment. Among the many writers who have described the peculiarities of the premature, Levine and Gordon have given very readable and clear analyses.[2, 3]. Levine's recent discussion of physiologic handicaps of prematurity condenses this information.[2] Most of the following material on physiologic handicaps is taken from his discussion.

In addition to the natural defects which are due to prematurity itself, the premature infant may suffer additional handicaps in being damaged by the disease of the mother which produced the premature delivery, or he may be injured by a traumatic delivery, or he may have congenital anomalies which militate against survival.

Respiratory Difficulties. Premature infants tend to have rapid, shallow irregular respirations interspersed with periods of apnea and periods of cyanosis. Furthermore, their lungs do not expand as quickly as the lungs of full-term infants, and persistent atelectasis makes their respiratory margin still narrower. If to these facts one adds the poor swallowing mechanism which results in aspiration of milk and other fluids into the lungs, it is apparent how many respiratory dangers the premature faces.

Some of the specific causes of respiratory difficulties which Levine mentions are: (1) weak respiratory center which responds poorly to the usual stimuli; (2) weak cough and gag reflexes which favor aspiration; (3) reduced capillaries in the lungs and medulla which made more difficult the chemical transfers of respiration; (4) poor pulmonary elastic tissue; (5) undeveloped pulmonary alveoli; (6) weak chest muscles; (7) soft thoracic bony cage; (8) decreased oxygen saturation of blood; (9) persistence of fetal type of hemoglobin; (10) decrease in carbonic anhydrase.

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Body Temperature: Prematures tend to develop low temperatures when exposed to cold and to develop excessively high temperatures when exposed to heat. They undershoot or overshoot the mark. They get cold easily because they have a relatively decreased basal metabolic rate, because they move around in the crib less than fullterm infants and so generate less heat from muscular exercise, and because they have less subcutaneous insulation in the form of fat. They are born without their overcoats. Chilling is a great hazard to the premature infant; few survive who are chilled to the bone. Their heat must be carefully maintained, realizing at the same time that they are easy to overheat. The reason they get hot easily is that they have a poor sweating mechanism.

Renal Function. Prematures have poor renal function which may express itself in three ways: 1) edema, 2) acidosis, 3) azotemia. Since the kidneys cannot eliminate sodium well there is danger of edema if much normal saline solution is given. Acidosis is often masked, the infant merely failing to gain, or to nurse properly, or appearing anxious or fatigued. Giving the proper amount of alkali brings about great improvement.

Alimentary Tract. In order to grow properly the premature infant needs proportionally more food than the fullterm infant, and yet he has physiologic handicaps of the alimentary tract. He sucks weakly and swallows poorly. He has decreased amounts of gastric hydrochloric acid and digestive enzymes. He absorbs fat poorly, and because of poor fat absorption he takes up fat-soluble vitamins with less efficiency.. When formulas containing the usual amount of fat are given much of the fat is lost by way of the stools. This defective fat absorption has brought about a reorientation concerning what types of feeding should be fed the premature infant. The most strongly championed viewpoint at the present time is that the feedings should be low in fat. [3-4]

Hemorrhage. Premature infants are prone to hemorrhages because they have fragile capillaries, they have a tendency to low plasma prothrombin, and possibly because they have low plasma globulin and a tendency to hydremia. These hemorrhages are very real hazards and explain many of the deaths that occur.

Anemia. The anemia of prematurity occurs so constantly that it is a thing to be expected and treated. Some of the reasons premature infants are prone to anemia are: 1) the amount of iron stored in the body before birth is low because the child leaves the uterus prematurely; 2) the formation of red blood cells and hemoglobin is defective; 3) there is increased destruction of blood cells due to their embryonal character; 4) the fast rate of growth of the premature infant outstrips his ability to manufacture sufficient red blood cells and hemoglobin; 5) there is a tendency to hydremia, which dilutes the blood; and 6) the premature frequently has infections which produce anemia.

Infections. Premature infants are notoriously prone to have infections, which are a common cause of death. They have these infections because: 1) they probably do not receive the usual amounts of immune substances across the placenta from their mothers; 2) they are unable to manufacture antibodies well; 3) they do not make granulocytes well in the bone marrow; and 4) there is an increased water content of the body. One of the most important things in the care of the premature infant is the prevention of infection. Any premature who is not doing well must be searched carefully for signs of infection, since the infant often fails to react in the usual manner with fever.

Rickets and Other Deficiencies. Rickets occurs regularly in premature infants who are not given large amounts of vitamin D, and sufficient calcium and phosphorus. These infants have low stores of calcium and phosphorus at birth, and they do not absorb fat-soluble vitamins, including vitamin D, very well. The rapid body growth also predisposes them to rickets. Rickets can be prevented easily if premature infants are routinely given large doses of vitamin D, and the amount of calcium and phosphorus ordinarilly contained in the usual feedings.

Actual Care of the Premature Infant

The four cardinal principles in the care of premature infants are: 1) careful, skilled nursing; 2) maintenance of proper temperature of the infants; 3) prevention of infection; and 4) proper feedings.

The exact details of management of the premature infant differ with the various centers which have the best records for premature care. The most important factor by far is skilled nursing. There is no substitute for a good nurse. So widely recognized is this that an increasing number of pediatric centers about the country have set up special facilities for the training of nurses in the care of premature infants. Many institutions, communities, and states are taking advantage of these improved opportunities for training by sending their nursing personnel for special courses. One may confidently expect lower death rates in premature infants when such properly trained nurses assume charge.

Immediate Care of the Premature Infant. The most important thing in the immediate care of the premature infant is to be prepared for his arrival into the world. So often the family and the physician become so engrossed in taking care of the mother that they do not make the proper preparations for the premature infant. Few mothers undergoing premature delivery lose their lives at this critical moment of birth because proper preparations have not been made.

When a woman is in premature labor the guiding principle in her management should be to make the labor and delivery as safe for the baby as possible, realizing that the premature infant faces unusual hazards by virtue of the many factors previously mentioned. The maternal analgesia or anesthesia should be carefully selected and kept to a minimum so that the baby may enter the world as alert as possible. He will need his wits about him to survive. Caudal analgesia is often more frequent[5]. Due to the fact that premature infants have a tendency to low plasma prothrombin levels and thereby are prone to have hemorrhages, vitamin K should be given to the mother in labor, and should be given to the infant after birth.

In the resuscitation of the newborn premature infant great stress is laid on extreme gentleness. There is no place for tactics such as rough manual artificial respiration, spanking the baby hard, or chilling him. The upper air passages should be cleared of mucus and blood and amniotic fluid as quickly as possible by gentle suction. A tracheal catheter in skilled hands may be life saving. Stimulant drugs should be reserved for the very last, and given sparingly. There is still a great tendency to pump powerful products into these babies. It is difficult to estimate how often this is lifesaving and how often this is lethal. Anyone who sees many newborns runs across babies who are markedly overstimulated to the point of convulsions and collapse. It is significant that almost all of the investigators who write on resuscitation reserve stimulant drugs to the last, and mention them disparagingly.

As soon as the baby is born he should be placed in a heated crib or incubator, and, if resuscitation is required, as much as possible should be done under conditions where the child's body heat will be maintained.

Nursery Care. Ideally, premature infants should be in special nurseries with special nurses trained in their care. Practically, in many communities the facilities are highly inadequate. Because hospitals are overcrowded and because babies are small the current practice in many places seems to be to see how many infants can be squeezed into one room. The nursery is to often the last part of the hospital which is remodeled or enlarged.

It is strange to visit hospitals and be shown the latest and most modern surgical and x-ray equipment, and to be escorted through shining corridors, only to wind up in some dark cubbyhole of a nursery which houses the hope of the nation. Fortunately, this state of affairs is not generalized and is becoming less frequent.

Premature infants should be isolated from one another as much as possible. There should be plenty of space between the cribs, and each child should have his separate linen, thermometer, nursing bottle, and other equipment.

The nursery temperature should be about 80 to 85 degrees F. if the babies are not in incubators. If they are in incubators the room temperature may be less. The humidity of the air should be about 55 to 65 per cent.

Oxygen should be given to all premature infants for twenty-four hours after birth, and for longer periods for feebler infants. These children have a low blood oxygen saturation and have less margin to work on. Respiratory difficulties are very common. Even after the child is able to do without constant oxygen administration it is wise to give oxygen for a few minutes before and after feedings. Feeding is an effort for a tiny premature and the oxygen gives him a boost.

The child should be picked up as little as possible. Feeding can be done in the crib. If one feels impelled by civilized custom to bathe the premature infant — a totally unnecessary procedure for the first week at least — the bath should be carried out in the crib or incubator. Carrying the premature infant around the nursery to show him off to visitors should be strictly taboo.

The premature infant should be weighed only every two to three days, unless some strong reason, better than curiosity, demands that he be disturbed more often.

Maintenance of Proper Temperature. Premature infants do best when their body temperature is kept between 97 and 99 degrees F. Conservation of heat should start at the moment of birth, and efforts should be taken at frequent intervals until it stabilizes. There is a great danger also of overheating the baby. A thermometer laid alongside the baby in the crib tells the temperature of the crib or incubator. Incubator temperatures must be checked frequently. Loss of heat can be minimized further by not taking the baby from the crib for any and every purpose.

Prevention of Infection. For reasons previously cited the premature infant is particularly prone to infections. He must be rigidly protected if he is to have his chance of survival. Individual aseptic medical technic in the handling of the infants is the single most important thing. All of the equipment of an individual infant should be kept separate from that of others--linen, thermometer, nursing equipment, etc.

Gown technic should be carefully followed in handling the infants. In many nurseries emphasis is no longer placed on relieving nursery personnel from duty at the first sign of respiratory infection. A mask is not adequate protection from respiratory cross-infection, especially when it is worn several hours, sometimes on the face and sometimes hanging at the throat, and fingered frequently for adjustments.

It goes without saying that the hands of doctors and nurses should be washed thoroughly before touching or examining a baby and between handling different babies. The ritual of dipping the hands quickly in special solutions probably kills few germs. Old-fashioned soap and water are better.

Everybody knows these simple precautions to take against infection, yet the human element is so strong that one finds the rules violated repeatedly. People walk into nurseries in street clothes without first putting on a gown, take off coats and roll up sleeves as if that alone were sufficient, and touch babies without washing hands. Janitors come in in work clothes and maids often have terrible technic. Nurses, over-worked and handling more infants than they can manage properly, tire of following gown and hand-washing technics and take short cuts from baby to baby. Then some catastrophe, such as an outbreak of diarrhea or of respiratory infection, ensues. Investigations by hospital personnel are made, rules get rigidly enforced for awhile, and then things lapse back to where they were. The answer to all of this is constant indoctrination of everyone with the proper technics, interest by physicians in how closely the rules are followed, and a well-trained head nurse who is not so over-worked herself that she is unable to roam the nursery "trouble-shooting" for breaks in technic. A sufficient number of nurses helps; an average of one for every four prematures is the proper ratio. In the current nurse shortage this is like dreaming of Utopia. Still, persistent efforts by physicians and hospital authorities to build up the nursery personnel will eventually result in the proper number of trained nurses.

Nursery personnel should be watched daily for evidence of colds, diarrhea, or any other illness and should be examined and relieved of duty if a communicable condition is found.

When nurseries are cleaned the floors should be moistened, or special technics of oiling the floors should be used. Dust must be kept down. Janitors and maids should be gowned as particularly as the nurse or doctor.

Ultraviolet light barriers are being used in many nurseries. They have an authoritative appearance which often gives the impression that all is well. Their only use is only a small part of the prevention of infection.

A very important factor in preventing infection is the prompt isolation of any premature infant who appears ill. This is of special importance when the child has a diarrhea, but also holds true for other types of infection.

Fortunately, premature infants are not often taken to the show window of the nursery to be paraded for the admiring throngs of relatives who come to see the babies and, incidentally, fill the air of the corridor with incalculable numbers of pathogenic organisms. Since premature infants do not often leave the nursery, they do not have to run the gantlet of the germ-laden corridor on the way to see their mothers.

Feeding the Premature Infant. All food is withheld for the first 21-24 hours, in order to give the baby a chance to become adjusted to extrauterine existence. A number of physiologic adjustments have to be made at this time, and experience has shown it is better to withhold food temporarily.

When feeding is started it is as important to know how to feed the baby as it is to know what to feed him. Since premature infants swallow poorly and frequently aspirate fluids into their lungs, the first feedings are a test of the child's ability to swallow. The first feedings should invariably be given by medicine dropper technic, using a dropper with a small section of soft rubber tubing which projects one quarter of an inch beyond the glass tip of the dropper. When one finds that feedings are taken well by dropper, the infant may be tried on feedings from a small premature nursing bottle with a nipple made from a medicine dropper bulb. Home-made special bottles can be made by taking empty penicillin or streptomycin vials and making nipples from medicine dropper bulbs. Feeding by gavage [6] should be done only by nurses who are skilled in the procedure. Gavage feedings may be of great value for infants who tire easily or become cyanotic when fed by more prolonged dropper or bottle technics. A small catheter is used, No. 8 French for smaller infants or No. 10 French for larger infants. The tip of the catheter is first placed on the tip of the baby's ensiform cartilage. The distance to the bridge of the baby's nose is measured on the catheter and a circle of indelible ink is marked on the catheter at this piont. Another circle 2 cm. above this one is also marked, and a third circle is made 4 cm. above the first circle. The baby lies on his back on a flat surface, with his head in the median line. When the sterile dry catheter is passed to the point where the first circle is at the gum margin the eye of the catheter will be in the esophagus about 1 cm. above the cardiac orifice. When passed to the second mark it will be in the upper part of the stomach, and when passed to the third mark, well into the stomach. Feedings are usually given with the catheter passed to the first mark. When the feeding has slowly run in, the catheter is pinched firmly in two places to prevent leakage on withdrawal and is pulled out quickly.

Type of Feedings. In a paper of this scope it will be impossible to consider all the various types of feedings which have been championed for the premature infant. If one remembers the alimentary tract physiologic handicaps previously discussed, it will help in deciding what type of feeding to employ. All of the standard pediatric texts have detailed schedules for feeding premature infants.

The current enthusiasm based on the premature baby's inability to absorb fat well is for feeding low in fat, and moderately high in protein and carbohydrate.

Feedings made from half skimmed cow's milk, or the convenient powdered half-skimmed milks Alacta and Dryco are frequently used. Human milk to which calcium caseinate (casec) has been added in a proportion of 2 per cent has many adherents. Many other preparations can be used successfully. In fact, the more one sees of premature babies and how they can be raised successfully on a wide variety of feedings, the more one comes to believe that careful nursing, preserving heat, and preventing infections mean more than the special type of food employed.

Vitamins. For reasons previously given premature infants have high vitamin requirements, especially for vitamin D and vitamin C. Vitamin C is necessary for utilization of certain amino acids and to prevent scurvy. At the end of the first week the child should receive 25 mg. a day, and this should be increased within a week to 100 mg. a day. Vitamin D should be started not later than the 12th-14th day. While fullterm infants require about 800 international units a day, the premature infants should be receiving about 2000 such units or more by the time they reach one month of age. Aqueous solutions of vitamins are considered safest for premature infants because they do not produce lipoid pneumonia if aspirated into the lungs and because fat-soluble vitamins are not absorbed well.

Poly-vitamin aqueous solutions, such as are being placed on the market in increasing numbers by various firms, may be used to advantage, provided the vitamin requirements of the baby are met.

Iron. Opinion is divided as to the desirability of giving iron preparations to premature infants in the first weeks of life. Some advise that iron be given when the baby weighs 5 pounds, while Diamond[7] advises that iron be started at about the third month of life, and that the daily dose be 2 to 4 grains of a ferrous sulfate preparation.

Fluid Administration. If sufficient fluids are not taken orally, parenteral fluids will be required. Lactate-Ringer's solution is preferred to normal saline for subcutaneous administration because it is a buffered solution and is less apt to cause adema. The total amount of a single administration of subcutaneous fluids is about 20 cc. per pound. For intravenous administration of fluids one may use 5 per cent amino acid solution, or blood or plasma, not exceeding 10 cc. per pound for any single injection. If fluids are administered by intravenous drip this quantity can be exceeded. It is beyond the scope of this paper to consider parenteral fluids in more detail.

Criteria for Discharge from Hospital. Before a premature infant is discharged from the hospital he should be well adjusted to his feedings, should be gaining weight, should weigh 5½ to 6 pounds, should be able to maintain an average body temperature in a room temperature of 70-75 degrees F., should have no anemia, and should have a suitable home situation.

Follow-Up Supervision. The proper care of the premature infant carries over into the home, where supervision by the private physician or visiting nurse helps the premature to continue to do well. This is a most important community aspect of the problem of caring for premature infants.

Summary and Conclusions

A summary of present day concepts of the care of the premature infant has been given.

A knowledge of the physiologic handicaps of the premature baby is fundamental to proper management.

The four cardinal principles in the care of the premature infant are: 1) careful skilled nursing; 2) maintenance of proper temperature; 3) prevention of infection; and 4) proper feeding.

When strict attention is paid to these fundamental requirements one will have discharged the definite obligation of giving to the premature infant the birthright of protection which was denied him by premature delivery.

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20 South Dunlap Street

Cancer, Early and Late*

R. H. FENSTERMACHER, M. D.

Vicksburg, Miss.

EARLY cancer is generally curable and the converse is true of late cancer. It would seem that the major problem in control of this dread disease is early diagnosis which, of course, must be followed by adequate treatment. Early diagnosis is the keystone on which the entire structure of cancer control rests. Therefore the early diagnosis of cancer or possibly the prevention of this disease should be a constant responsibility in the mind of every physician.

This survey was undertaken to compare the results obtained following treatment of patients with malignant lesions classified, perhaps somewhat arbitrarily, as early or late cancer and to determine, as accurately as possible, what transpired between the onset of symptoms and the institution of definitive treatment. Records of three hundred and twelve patients from the files of the tumor clinic of Mercy Hospitals were studied and pertinent data recorded to fulfill the survey. Records of patients with malignant disease of the cervix, breast and skin were selected because symptoms are generally produced early in the disease and the majority of these patients should have curable cancers if immediate medical consultation was sought and accurate diagnosis and effective treatment carried out.

Eighty of the three hundred and twelve patients included in this review had carcinoma of the uterine cervix. Theoretically, early diagnosis should be the rule rather than the exception because this lesion generally produces symptoms which should prompt the patient to seek medical attention and the cervix is readily accessible for examination and biopsy by the physician. Thirteen of the eighty patients consulted their physicians for routine physical examination or complaints not referable to the cervical lesion. Suspicious lesions, such as small erosions or granular areas, which in several instances were seemingly insignificant, were biopsied and found to be cancers. Six of these cancers were preinvasive or so-called carcinoma in situ. Four patients had early invasive squamous cell cancers and three had moderately advanced cancer which, in all cases, was limited to the cervix and not yet fixed to the pelvic wall. Eleven of these thirteen patients are alive and well following treatment for periods ranging from six to twenty-four years. Two of these patients died two and one half and four years following treatment. Both had recurrence and extension of the cancer. Sixteen of the eighty patients sought medical attention for symptoms such as leukorrhea, post-coital bleeding or irregular vaginal bleeding within three months of onset of these symptoms. Cervical lesions ranging from small erosions to large cauliflower like tumors were found on examination. In too many instances the tumor had already extended into the paramentrium or the vagina. Following adequate treatment nine of these patients are living from five to twelve years and seven are dead from six months to four and one half years after treatment. Twenty-eight patients in this series were seen from three to six months following the onset of symptoms. Seven patients stated that they had been given medicine, douches, etc. . . . Two patients were advised to have biopsies made but delayed for several months while symptoms continued and became exaggerated. Three of these patients had had previous subtotal hysterectomy, presumably for fibroid tumors of the uterus. Ten of these twenty-eight patients are alive and well from five to eight years following adequate treatment and eighteen died from five months to two and one-half years following treatment. Twenty-three of these eighty patients were seen by our physicians over six months following the onset of symptoms. Several patients had vaginal bleeding from two to two and one half years and one patient was practically exsanguinated following intermittent vaginal bleeding for five years. Six patients in this latter group had previous medical attention. In one instance biopsy was advised and in the remaining five symptomatic treatment was administered. Two of these patients had previous subtotal hysterectomies. Only four of this group of twenty-three patients are living from five to seven and one half years following treatment and nineteen are dead from three months to five years following treatment.

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*Read before the Section on Surgery at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948

These statistics show approximately forty per cent of these eighty patients with carcinoma of the cervix living more than five years following treatment. The remarkable feature, however, is the inverse ratio which exists between the duration of symptoms and the percentage of cures. Eighty-five percent of the patients who were diagnosed and treated before the onset of the symptoms were cured and this cure rate drops steadily as the duration of symptoms before treatment increases. Generally speaking the outlook is very gloomy, in fact, almost hopeless if symptoms are present over six months before the treatment is instituted.

Several other pertinent facts may be gleaned from this review. Whereas the patient is in error in some instances in delaying seeking medical attention, in more than isolated cases the physician is at fault in failing to give proper advice to the patient who has consulted him soon after the onset of symptoms. He may fail to examine the patient and simply prescribe medicines or douches, as was done in several instances in the case cited, or he may even after examination fail to suspect the presence of cancer. This status can be remedied by taking biopsies of these apparently insignificant lesions or requesting cytologic smears for tumor cells. This latter procedure is extremely useful as an aid in the diagnosis of early cancer of the cervix. Fewer opportunities would be present for the development of cancer of the cervix if, instead of performing supracervical hysterectomy for fibroid uterus and salpingitis and oophoritis a complete hysterectomy were done. The diagnosis of cancer of the cervix is not extremely difficult and the outlook for a cure is good if the patient presents herself early and the physician is alert. Of course the early presymtomatic cancer has the most ideal outlook and is theoretically one hundred percent curable. Routine physical examination and cancer detection centers are ideal set ups for uncovering these early curable cancers.

Eighty-two of the three hundred and twelve patients were found to have carcinomas of the breast. The knowledge among lay people of the possibly malignant nature of indurations in the breast is fairly common and the presence of these changes should make women seek medical advice at a relatively early stage. Two patients in this group were found to have small breast tumors on routine physical examination. These tumors had produced no symptoms and were discovered during the course of examination for some other complaint; which had brought the patient to seek medical advice. Both of these patients were advised to have biopsies and when cancer was found radical mastectomies were performed. Both patients are alive and well five and one-half and nine years following surgery. Twenty-six patients consulted their physician within three months of the onset of symptoms. The presenting symptoms were generally discovery of a lump in the breast, bleeding from the nipple and in two cases itching and scaling of the nipple. Of this group eighteen are alive and well from five to eighteen years following treatment, six are dead from nine months to four years following treatment and two are alive for three and four years with metastasis. Sixteen patients sought medical advice within three to six months of onset of symptoms. Four of these patients had previous medical consultation and had been given medicine and injections. One of these patients stated that her doctor said he believed a biopsy should be done but did not refer her to another physician and did not attempt to perform a biopsy himself. Seven of these patients are alive and well from five to twelve years and nine are dead from ten months to six years following treatment. Thirty-eight patients were seen after having had symptoms over six months. The duration of symptoms ranges from seven months to four years. Eight of these patients had had previous medical consultation for these symptoms and several had been told "not to worry about the lump." Of this latter group twelve are alive and well from five to twenty-two years. Three are alive with metastasis from two to six years following treatment and twenty-three are dead from four months to four years following treatment.

These figures show that breast cancer is not a hopeless disease if the diagnosis is made early and prompt treatment carried out. Approximately forty percent of the patients in this group with cancer of the breast are alive and well over five years following treatment. However the so-called cure rate falls from seventy-two percent in the groups receiving treatment within three months of onset of symptoms to about thirty percent in those who delayed six months or more. We must bear in mind, however, that culpability for delay in these cases lies not only with the patient, but also, in some instances, with the physician. In our breast series this physician culpability averaged approximately fifteen percent. Breast cancer frequently is indistinguishable from benign growth. Because of this fact no physician should tell the patient, "This is just a harmless lump." The diagnostic tools available to the physician must be efficiently utilized early, so that the advanced signs of cancer, which make diagnosis easy and prognosis unfavorable, will seldom be seen.

One hundred and fifty patients in this study had malignant tumors of the skin. Theoretically these lesions should be detected early but actually the average interval between the onset of symptoms and the institution of proper treatment was considerably longer than in the tumors of the cervix and breast. Basal cell cancers made up sixty-four of the one hundred and fifty patients in this group and even though approximately one half of these patients waited more than one year after onset of symptoms all the patients were apparently cured following surgery or irradiation treatment or combinations of these measures. Several patients had tumors from three to six years and one patient stated that the tumor had been present for fifteen years. It is simply their good fortune that basal cell cancers tend to remain localized and are relatively slow growing. Twelve patients of these sixty-four had previous medical treatment, varying from application of paste to surgery, irradiation and cauterization. The treatment was presumably inadequate and there was cauterization. The treatment was presumably inadequate and there was recurrence. Sixty-eight patients had squamous cell carcinomas of the skin. Eighteen of these patients consulted their physicians within six months after noticing the tumor. Seventeen of this group are alive and well from five to twenty-two years following treatment and one died in three years. Fourteen were treated from six to twelve months following onset of symptoms. Three of this group had previous medical consultation and two had cauterization of their tumors with recurrence in six to eight months. All of these patients were free of disease over five years following treatment. Thirty-six patients were treated over one year after the onset of symptoms. This time interval actually ranged from one to six years. Twelve of these patients had previous treatment consisting of surgery or irradiation and in two instances combinations of these two therapeutic measures. Seven of the patients died from one to three years following treatment and two are living with metastasis. Eighty patients had mived basal squamous cell cancers and all were cured following adequate treatment instituted from one to fourteen months following onset of symptoms. Six patients had malignant melanomas of the skin. One patient sought medical attention within three weeks of noticing a deepening color and an increase in size of a pigmented mole. This patient is living eight years following wide excision. One patient came in with metastatic melanoma six months after having had a pigmented skin tumor fulgerated while in the armed forces. This patient died in five months. The remaining patients had symptoms from six months to two years. One colored female had been, on the advice of her physician, putting salve on a melanoma of the heel of the foot for twelve months. She is living six months following wide excision of the tumor and groin dissection for metastatic lymph nodes. Of the remaining three patients two are living over five years and one is dead two and one half years after treatment. Four patients had fibrosarcoma. All of these patients had lumps in their skin over one year before seeing a doctor. One patient died sixteen months after treatment and the remaining three are living over five years.

The cure rate in this series of malignant skin tumors is ninety-two percent. The inclusion of the relatively low grade malignant basal and mixed basal squamous cell cancers naturally boasts this cure rate. The death rate increased markedly in the squamous cell group in relation to the prolonged duration of symptoms and the higher grades of the tumor. The fairly large number of patients who had previous treatment with recurrence tends to show that in many instances the initial treatment is inadequate. In some cases treatment was carried out without biopsy. This routine must be severely condemned. Biopsy is of greatest value in the small, early lesions and least in the large ulcerating, fungating lesions.

Reducation in the delay in diagnosis of malignant disease holds more immediate hope for victory in this current war being waged on cancer than any other related clinical or research activity at the present time. An attempt has been made in presenting these statistics to show that the responsibility for achieving this goal lies first with the patient and secondly with his physician. This is a fifty-fifty responsibility and when, for any reason, either party shirks his duty the patient suffers. Cancer education for the laity should bring patients to seek medical advice immediately after noticing any malfunction or anatomic abnormality in their bodies. It should also impress them with the importance of routine, yearly physical examinations by their physician or in the various cancer detection centers. These latter agencies must be highly recommended because they frequently uncover the early presymptomatic and curable malignancies as well as premalignant lesions. Eradication of premalignant lesions is sound cancer prophylaxis. The physician's responsibility is manifold. Regardless of the patient's symptoms he must be thinking of cancer in order to diagnosticate cancer. He must carry out the proper tests to make the diagnosis, give the patient proper advice and then see that adequate treatment is carried out. These data and suggestions are not submitted to draw criticism to the physician's role in the fight against cancer, but rather to put all of us on guard so that we may not unintentionally contribute to the patient's delay in obtaining cancer therapy. Errors in diagnosis, judgment and treatment are made by all physicians and will continue to be made because there is, at present, no universal test for cancer and there is no push-button type diagnosis looming on the horizon.

We, as physicians, regardless of specialties, must operate our own cancer detection clinics whenever we see patients. Every patient is entitled to careful, complete history and physical examination. We must be cancer conscious and extremely suspicious of the small, early lesions that might be cancer and carry out investigations to prove or disprove its presence. We must always bear in mind that one negative biopsy and one negative x-ray does not rule out malignancy. Cancer is persistent and tenacious and we must also be persistent and tenacious in fighting it. Conclusions from this analysis of some of our own experience with cancer are in full accord with the voluminous work of others. Because regional or remote spread may occur at any time after the development of the initial lesion adequate investigation and treatment of suspicious or obvious lesions becomes an urgent emergency. Delay most often leads to failure, prompt action to success.

DISCUSSION

Dr. F. G. Bratley (Jackson): Many hours of hard work are involved in gathering the information which Dr. Fenstermacher has so ably presented this morning.

Dr. Fenstermacher has discussed one of the important phases of the cancer problem, that is **early diagnosis.** The first step is the presentation of the patient to the physician as soon as he notices an abnormality. Due to extensive lay education about cancer through the American Cancer Society, patients are presenting themselves earlier to their physician. It is unfortunate that some people themselves earlier to their physician. It is unfortunate that some people develop a cancer phobia after being exposed to this educational program but the benefits outweigh the bad effects. When the patient entrusts himself to the care of a physician the latter must search carefully for the cause of his symptoms. In the breast and uterine cervix cases there is evidence of gross neglect in diagnosis on the part of the physician which I believe is due to two factors: Firstly, ignorance; secondly, too little time and too many patients. I wish to call your attention to the group of thirteen patients in the uterine cervix group who had no symptoms but consulted their physician for other complaints or a routine physical examination. These patients received prompt treatment and eleven are alive six to twenty-four years later. This is an example of what may be expected from the early diagnosis of cancer. Contrast the results in the group of twenty-three patients who had symptoms for six months or longer. Only four of this group are alive.

The cytologic diagnosis of cancer of the cervix is widely publicized both in medical journals and lay publications. Dr. Ayre of Canada has improved Dr. Papanicolaou's technic and the chances of finding an early carcinoma of the cervix by using the special spatula which scrapes the entire squamo-columnar junction of the cervix. A biopsy taken from one area might miss the carcinoma whereas the smear is representative of the entire cervix. A final decision as to the value of the vaginal smear diagnosis of cancer must await several more years of its use.

Until the research workers find an absolute cure for cancer the only hope is prompt and adequate treatment following early diagnosis. The statistics presented by Dr. Fenstermacher illustrates clearly the value of early diagnosis

Clinical Evaluation of X-ray Pelvimetry

ISADORE DYER, M. D.

(Guest Editorial)

X-RAY pelvimetry provides a definite aid in the management of obstetrics and in the choice of delivery procedure. Once the technique has been mastered by the roentgenologist, the obstetrician needs little study to evaluate the clinical significance of his findings and apply them to a given case.

Pelvic measurements in the office are still of value, and in a general sense, will reveal gross abnormalities. However, it still remains inaccurate if not useless to attempt to measure the narrow plane of the pelvis, namely the mid-plane. It is here where moulding will occur, posteriors rotate and transverse arrests be found. Hence it is of value to have an accurate appraisal of the bi-ischial diameters in all questionable pelves. The anterior-posterior sagittal diameters at the mid-plane will compensate on occasion and again, only by x-ray are these measurements available.

In addition to mid-plane diameters, one can obtain an accurate index of the inlet and outlet, the pelvic arch and angle of the sacrum. Any one of these pelvic planes can be expressed in volumetric capacity, universally in cubic centimeters. One then can have some tangible figure of exactly the amount of room present, as far as the pelvic architecture is concerned.

It remains then to learn how large a sphere (the baby's head) must pass through a given measured space. It is in this respect that the knowledge of the volumetric capacity of the fetal head is of utmost value. By compilation, the roentgenologist again can establish the volume of the fetal head. With this figure and a knowledge of the volume of each pelvic plane, the obstetrician can then have some appraisal of what to expect during labor.

In addition, the fetal position altitude and descent of the fetal presenting part can clearly be observed, all adding emphasis on the ultimate outcome.

A number of interesting observations have been made. We find that the opportune time for x-ray is at the thirty-eighth week of pregnancy. This allows maximum fetal growth. Should delivery not occur currently, the fetal head will increase in size at an average of 25 cc. per week. This weight not be too evident should prepartal moulding occur. Although other factors must be taken into consideration, the maximum amount of disproportion between the fetal head and the mid-plane is generally agreed at 200 cc. In other words a fetal head will mould to that amount. At the inlet the maximum is 50 cc. since the forces are not directed at the inlet as present at the mid-plane. In breech delivery where moulding is absent, this limitation of course, is far less.

One, then, might feel free in some cases to establish a clear cut indication for Cesarean Section devoid of all criticism. Intelligent trials of labor, knowing full well the feto-pelvic picture, can be carried out. The unsuspecting multipara with an average pelvis and a large baby can be spared the false sense of security, just because she happened to have one or two babies from below, of normal, average size.

Caution should be registered by anyone using only the x-ray findings to manage a given situation. X-ray pelvimetry is only a valuable aid. In a number of studies throughout the past few years, we have seen women with as much as 240 cc. disproportion, deliver from below. On the other hand, we have on record, women with as little as 150 cc. disproportion present the necessity by difficult operative intervaluation at the mid-plane. One most appreciative of all the other factors involved in labor and delivery, notably the soft tissues, behavior of the cervix, mechanism and force of uterine contraction, age of the patient, altitude of the fetal head and fetal position. Certainly anyone of these factors will present dystocia in the presence of an otherwise normal fetal-pelvic relationship as far as bony architecture is concerned.

And finally, it is unpardonable for any roentgenologist to present a report to the physician stating his opinion as to the feasibility of vaginal delivery, except in the rare abnormally deformed pelves. The report should be one of measurement only, the interpretation of which, like any laboratory report, should be delegated to the obstetrician himself, who alone can evaluate all the other factors which play such important roles in the ultimate outcome.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

The Southern Medical Association has just closed its annual session at Miami Beach. Dr. Lucien LeDoux of New Orleans presided ably as president and Dr. Oscar Hunter of Washington was installed as the new executive Dr. Emmett B. Carmichael served as secretary-manager of the session, doing the job mighty well during the illness of Mr. C. P. Loranz, who is resuming his work as secretary.

The Mississippi State Hospital Association held its regular annual session at Biloxi on October 18 and 19. The meeting was fairly well attended and the program was very good. The hospital association has the opportunity to serve a most important function at this time in the medical economy of the state.

Because the Buena Vista Hotel has not finished its large auditorium now under construction on the coast for conventions, the Southeastern Surgical Congress is postponing its meeting until next May. This congress furnishes one of the very best surgical programs in the entire nation. Dr. Douglas of Birmingham is the distinguished president, able in his field, and an executive who will not leave anything undone to assure an excellent program and delightful entertainment. Let the doctors of the state do their part to make the meeting a fine success.

Just as soon as your local society has selected officers for the coming year, please send us the names of your president and secretary and the time and place of your regular meetings.

The February meeting of the Mid-South Postgraduate Medical Assembly is now just around the corner. A fine program is in the waiting. Make reservations for your rooms now.

ANNOUNCEMENTS

Charles L. Neill, M. D., announces the opening of offices for the practice of neurological surgery, 201-202 Barnett-Madden Building, Jackson, Mississippi.

Curtis W. Caine, M. D., announces his entrance into the private practice of anesthesiology, Jackson 41, Mississippi.

Cyrus C. Johnson, M. D., announces the opening of his offices at 745 North State Street, Jackson, Mississippi, practice limited to urology.

The Long, Dees and Edwards Clinic announces the association of Dr. Arthur W. St. Clair, whose specialty is diagnosis and internal medicine, 777 North State Street, Jackson, Mississippi.

Doctors Browne and McHardy announce the association of Dr. Donovan C. Browne, Dr. Gordon McHardy, Dr. William Paine, Dr. Edwin Edwards, Dr. Frank Marek, Dr. Thomas Young, in the establishment of Browne-McHardy Medical Group for the practice of gastroenterology and internal medicine, 3636 Saint Charles Avenue, New Orleans, Louisiana.

J. Brown Farrior, M. D., formerly of New Orleans, announces the opening of offices at 910 Citizens Building, Tampa, Florida. Practice limited to ear, nose and throat.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

HYPERIMMUNE SERUMS IN TREATMENT OF WHOOPING COUGH—Jerome L. Kohn, Gittel Rudel, Manfred Weichsel, Lilian Buxbaum, Alfred E. Fischer, Dorothea H. Gunther and Catherine Lodyjensky, Williard Parker Hospital, New York, N. Y., Am. J. Dis. Child. 73:-321-33, September 1947.

"In a previous article on the treatment of infants with whooping cough, the importance of good nursing care, oxygen therapy and pharyngeal and tracheal aspiration was stressed. In addition to the above treatment, 151 children were given human hyperimmune whooping cough serum. Of these, 49 received a lyophilized preparation and 109 received a concentrated globulin fraction prepared from hyperimmune serum. Seventy-nine of the children were under 1 year of age. An additional 49 children received refined hyperimmune rabbit serum which also contained a pertussis endotoxoid. Only 2 of these latter children were under 1 year of age. Forty-four per cent of the children receiving serum had evidence of pneumonic infiltration.

The serums were given intramuscularly every other day for 3 doses, or, in desperately ill cases, on three successive days. Lyophilized serum representing 20 cc. of the original serum was dissolved in 10 cc. of sterile water. The dose of concentrated human globulin was 2.5 cc., extracted from 20 cc. of the original serum. The dose of refined rabbit serum was 10 cc.

Of the infants under 1 year who received human serum 70 of the 79 were improved. The apparent response to serum in patients over one year of age was not so striking as in the younger group. The improvement noted was a decrease in number of paroxysms and in vomiting. In some patients the improvement was only temporary and it was thought necessary to give additional injections of serum after five or six days. In the group receiving rabbit serum, improvement was seen infrequently. There were 4 deaths. All these children had received human serum. Only 1 death occurred among the 81 children under 1 year of age.

The disappearance of Hemophilus pertussis from the nasopharynx bore no relation to the clinical course of the illness and was not influenced by the serum. In many instances, the culture was still positive four weeks after the appearance of the whoop.

In the children here reported, a skin test with pertussis endotoxin was made before and three weeks after the injection of hyperimmune serum. The results were believed to be inconclusive.

The therapeutic response was equally good with the concentrated human globulin and lyophilized human serum. It is recommended that one or the other should be given to all infants seriously ill with whooping cough."

Comment: It has been our practice for quite some time to give the hyperimmune serum in the treatment of whooping cough. From the experience that we have had with it, we are delighted to recommend it to other physicians in the treatment of whooping cough.

V. A. CLINICAL PATHOLOGY

A 56-year old well developed, well nourished white male, who entered the hospital without assistance complaining of chills, fever and general weakness. He was discharged M.H.B. 2 June, 1947 in good condition. He reentered the hospital 22 September, 1947 with complaints of productive cough and dyspnea on exertion. There was a rapid downhill course, and the patient expired 9 October, 1947.

Clinical Progress: In March, 1947, the patient developed what was described as "flu" which left him generally weak and easily fatigued.

On admission to the hospital in May, physical examination revealed prostatic hypertrophy and chronic suppurative otitis media with conductive deafness. X-ray studies revealed a density in the right mediastimum and a small irregular density in the terminal left ureter. Laboratory studies revealed a normal urinalysis; negative Kahn; no parasites in the feces; sedimentation rate 20 mm; serum acid phosphatase; 60 B. U. and staphylococci in a urine sediment culture. The patient's general course in the hospital was satisfactory. A cystoscopic examination on May 8, 1947, revealed a Grade IV lateral lobe intra-urethral encroachment; Grade II median lobe encroachment; moderate trabeculation of the bladder, and 15 cc of residual urine. A prostatectomy was recommended but was refused. A bronchoscopic examination on May 14, 1947, revealed no tumors, pus, ulcerations or stenoses.

The admission temperature subsided; there was a six-lb. weight gain, and the patient was discharged M. H. B. June 2, 1947, with recommendation that he return in three months for a check-up examination. The patient returned to the hospital on September 22, 1947, complaining of pleuritic chest pain and exertional dyspnea. Physical examination revealed an obese, good humored patient with a nodule 3 cm. in diameter, non-movable, and non-tender in the right retroclavicular space. Along the right costoclavicular margins were noted multiple small areas of telangrectasis which were not present on prior physical examinations. There was a reduced persuccion resonance over the right upper lobe anteriorly and posteriorly. Bronchial breath sounds were heard in the right anterior apex area. The prostate was enlarged. Blood pressure 110/70 Pulse 88, temperature 100.2 degrees. There was no weight loss.

Clinical Progress: A few days after entry a cyst-like subcutaneous mass, several centimeters in diameter, was noted 20 mm. above the left nipple. The mass was firm, non-tender, and freely movable except at the mid-point where the skin was slightly puckered. There was engorgement of the 3rd right and left intercostal vessels.

The Chief of Medicine was called because of a 24-hour swelling of the patient's right neck and face. The patient was then transferred from the "lodger" ward to the acute medical ward. A urinalysis was normal. A differential blood count revealed a 5% eosinophilia, and otherwise normal cell relationship. The Kahn test was negative. The sputum was negative for TBC. A chest x-ray revealed a marked density involving the upper half of the right lung.

The patient complained of a feeling of "tightness" in the chest and coughed considerably. It was noted that the patient became dyspneic on slightest effort and developed cyanosis which required oxygen treatment. The temperature rose to 102 degrees and he coughed up muco-purulent material. Treatment with penicillin and stimulants was without success. The patient became comatose and expired 17 days after admission.

There is no Marxian method of eliminating gambiae mosquitoes as distinguished from a western democratic method. The principles of sanitary engineering do not bear a Russian or an American label. No difference exists between tuberculosis in the Soviet Union and tuberculosis in the United States. Infantile paralysis is the same thing in Moscow and in Washington, and human sorrow is no less poignant in one city than in the other. The world of disease and misery is not divided; it is a common world. In terms of human suffering the world is truly and tragically one world.—Raymond B. Fosdick, Rockefeller Foundation.

THE PUBLIC HEALTH NURSE AND VENEREAL DISEASE CONTROL

Nettie O. Turner, R. N.
Advisory Nurse, Field Unit

The public health nurse occupies a unique place in the public health program and her duties and services are many. As a part of the symposium on "Working Together in the Venereal Disease Program," I should like to discuss in particular the ways in which the nurse cooperates with other members of the health department staff in promoting venereal disease control.

When one thinks of the public health nurse in a generalized health program, the following activities come to mind in which the nurse always figures prominently: 1. immunizations; 2. tuberculosis control, venereal disease control, and other communicable diseases; 3. maternal and infant welfare and care; 4. preschool, school and adult hygiene; 5. midwife supervision; and 6. health education.

The nurse's approach to syphilis and gonorrhea control is not fundamentally different from her attack on tuberculosis, typhoid or scarlet fever. The ability to assist in the control of the venereal diseases requires knowledge of the diseases themselves and a keen appreciation of ethical relationships. The public health nurse integrates venereal disease control into her total program by carrying out her duties in generalized clinics, on home calls, and wherever people are seen in the interest of any health problem.

In the generalized clinic, the nurse makes an effort to see to it that the atmosphere and general surroundings of the clinic are in keeping with the work to be done. This is an important factor in securing the confidence and cooperation of the patients. The clinic must be clean, well lighted and well ventilated. The physical arrangement is such as to offer privacy for history-taking, physical examinations, and the administration of treatment when given. Pertinent literature, including up-to-date pamphlets are made available. Posters, drawings, and other illustrative materials are used to decorate as well as to instruct. The nurse is on hand for necessary nursing technics and procedures, for setting up the clinic and examination rooms. She also assists the physician with examinations and in some instances administers treatment.

Adequate record systems are a part of the public health nurse's responsibility. She strives toward completeness and keeping the records current and accessible. When a patient enters the clinic, the clerk pulls the patient's record and sends it back to the nurse or other worker for a notation of the service being rendered, so that proper planning may be done for the patient's welfare. Care exercised in this respect can eliminate needless duplication and loss of time. For example, if the nurse or health officer obtains a blood test and there is no notation of it entered on the patient's record, the venereal disease investigator might make an unnecessary trip many miles into the field to get the patient in, only to have the patient say after arriving, "I was in for a blood test last Tuesday." Working together in the venereal disease control program is the most certain way to achieve good results and to insure that all efforts count.

Each patient is approached by the public health nurse in an individual manner, with some understanding on her part of any mental and emotional problems involved. The four major responsibilities of the public health nurse have long been recognized as:

1. Case finding
2. Case holding
3. Health teaching
4. Care of the sick.

In our clinics today, the nurse is busy taking blood tests and assisting with the physical examinations of contacts that venereal dis-

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Presented before the Mississippi State Board of Health Staff Conference, Sept. 18, 1948.

ease investigators send in for examination. While giving the blood tests, an opportunity is afforded to explain to the patient something of the nature of the diseases, syphilis and gonorrhea, and suitable literature is made available. Should the patient's blood test be found positive, this involves more detailed explanation of the disease, its manifestations or possible lack of symptomatic manifestations, and its ultimate prognosis. The health officer usually can be counted on to give this help.

Patients with infectious syphilis are often referred to the nurse for instruction relative to precautions to be taken to prevent the spread of the disease. She helps the patient to look realistically at the treatment offered him, to understand that adequate treatment means the administration of a prescribed amount of drugs, with close observation during and after drug therapy for his own good. She takes care to point out the necessity for immediate examination of all contacts because of their possible need for treatment and their potential danger to the community. An effort is made to help the patient accept the responsibility toward his contacts, his family and the community. When the patient is to be sent to the rapid treatment center, the nurse discusses with him transportation, etc., and sees that he has clear instructions as to clothing and other articles he will need while there. She may assist him in making arrangements with his employer for sick leave or a leave of absence and in making arrangements for the care of his family while he is hospitalized.

After treatment has been completed and the patient returns to the clinic, the nurse assists in giving clear instruction as to recommended follow-up examination and post-treatment is indicated.

Except on cases where the venereal disease investigator asks the nurse's help in further follow-up of contacts, her home visits are usually limited to antepartum patients with syphilis and infants born of syphilitic mothers. This is considered one of her important responsibilities, to which she gives special attention. She makes a blood test on every expectant mother as early in pregnancy as possible, secures her history and makes note of any evidence of gonorrhea or other venereal disease, and makes a monthly blood test on every expectant mother who has syphilis or may have had syphilis in the past, as revealed by her history.

The public health nurse makes every effort to see that any treatment indicated is instituted before the fifth month of pregnancy. She gives close supervision to infants born of mothers infected with a venereal disease and works toward the infant's having a physical examination and blood test by the time it is four months old. She is alert for any symptoms of ophthalmia neonatorum or other indications of gonorrheal infection and secures examination of every such infant and treatment when indicated. She teaches the family and attendant the infectious nature of syphilis in the newborn and the precautions to be used in caring for the baby. She instructs the family in the general principles of infant care.

It is not only on the diagnosed case and its contacts that the nurse must focus her attention for case finding opportunities in venereal disease. In the routine of her daily visits to the home, industry, school or clinic, the alert and observing nurse is sure to come upon statements which may be significant in relation to venereal disease. For instance, a wife in her last few months of pregnancy may tell the nurse that her husband has become unfaithful and may hint at the presence of disease symptoms. The following are true instances:

A negro woman came to the nursing conference. She had previously been carried as a maternity patient with a negative blood test. However, at the conference she confided to the nurse that she had a "breaking out" and that her husband had the same "breaking out" but she could not get him to come in for an examination. The nurse was immediately suspicious of secondary syphilis, so she took a blood test and then sent the patient in to the health department where the health officer made a darkfield examination and a diagnosis of this condition was confirmed. The woman was referred to the Delta Medical Center for treatment. The husband and his extramarital contact were brought in for examination by the venereal disease investigator, were found positive and were treated at the Delta Medical Center.

In another instance, an infant about two months old was born to a mother that did not receive nursing or medical care before birth of the baby. When it was brought in to the nursing conference by a midwife, there were sores and skin peeling from the neck, soles of the feet and palms of the hands. This infant was sent with the mother to the Center for proper care. The father too was found positive and was referred for treatment.

These are but two typical examples--there are many others which might be mentioned where the nurse has been instrumental in bringing cases to light which might otherwise have progressed untreated, undermining the family structure and threatening the public health. While the public health nurse admittedly is an important factor in the venereal disease control program, she by no means works unassisted. The ultimate success of her work depends in large degree upon her ability to cooperate with and receive the cooperation of all other members of the health department, private physicians, clinicians, social workers and other allied groups in the community.

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If the flame is kept burning, and our
hands hold it high,
And courage upheld, and we say
never die,
on to the end,
Then, true strength is given to keep
And always and forever, the profession
defend,
Our help may seem puny, and not
worthy of thanks
But is appreciated lots by some high
in the ranks
And if it is given in a spirit of love,
It surely will always a great blessing
prove

Then onward we'll march, with our
torches held high.
And our help, when 'tis sought, we
will never deny,
But with shoulder to shoulder, all
thro' the fray,
We will march with our men to the
end of the way.

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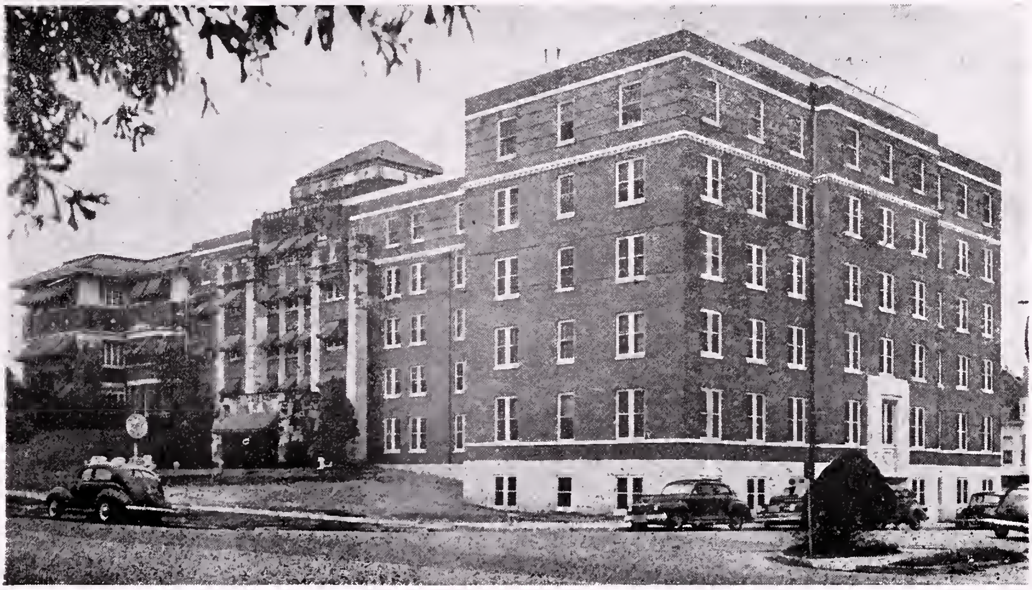

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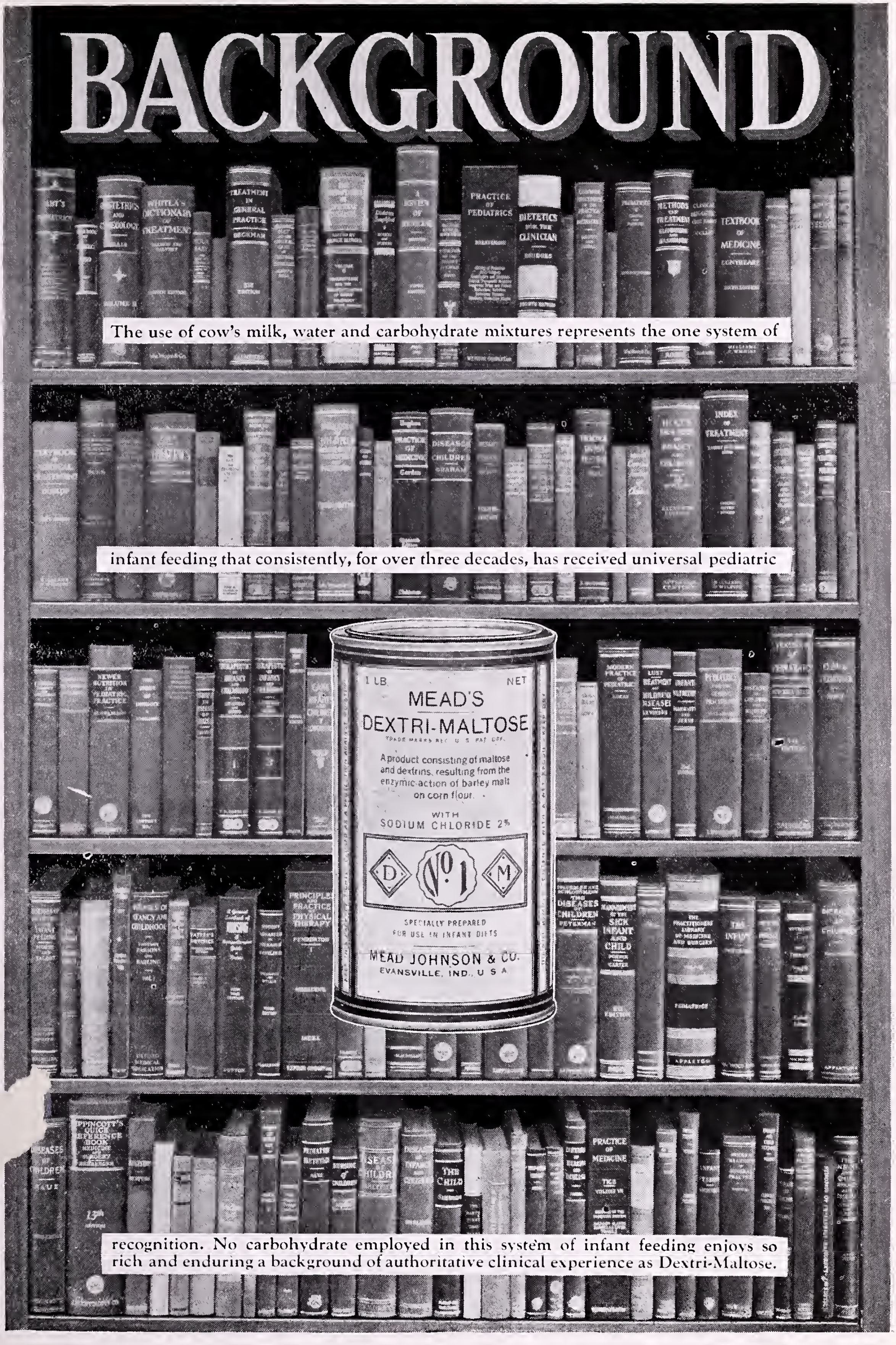
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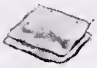
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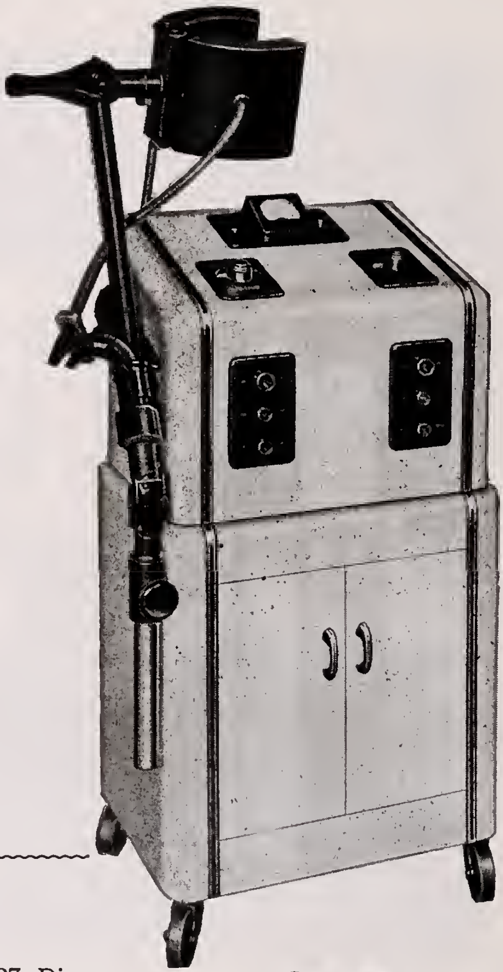

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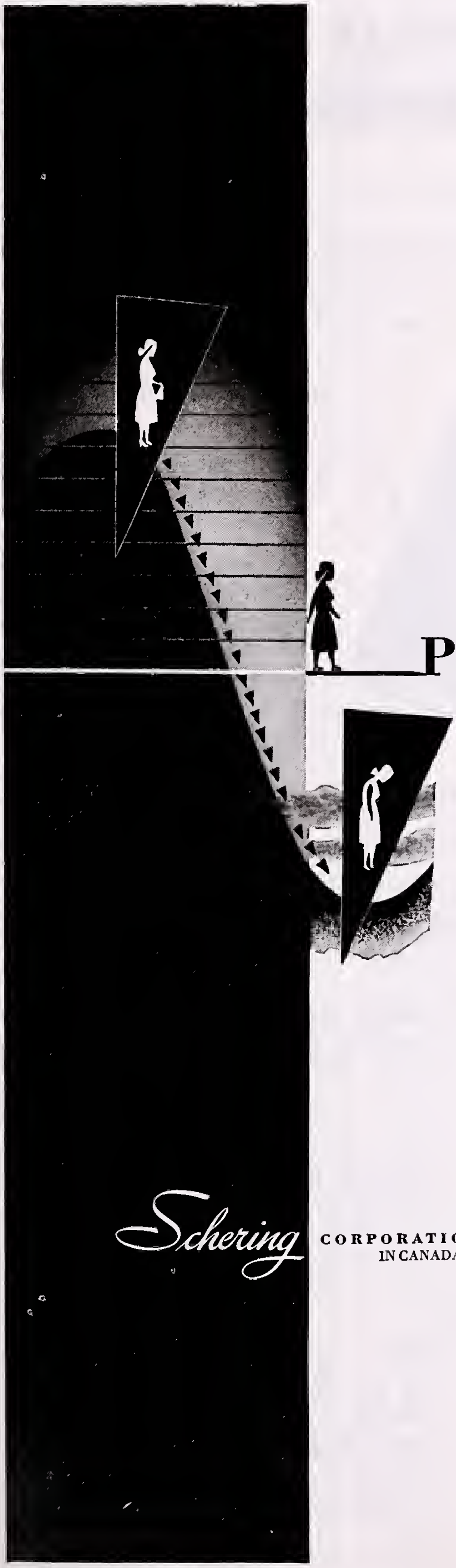

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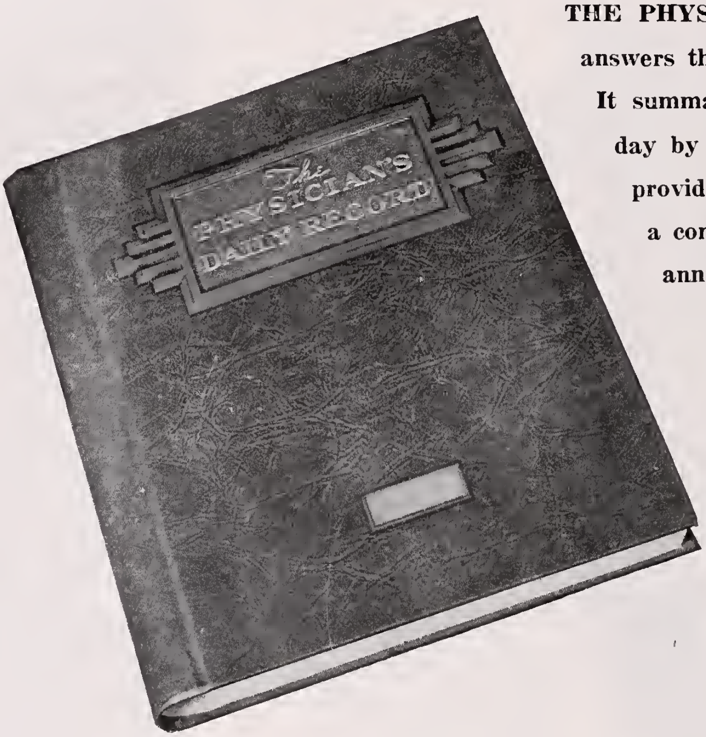

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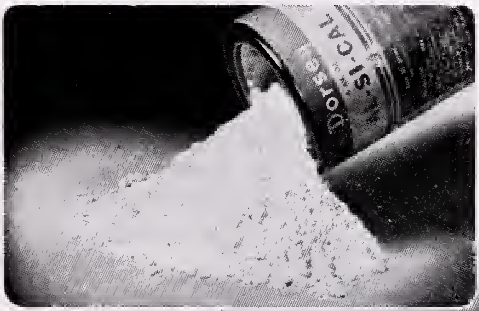
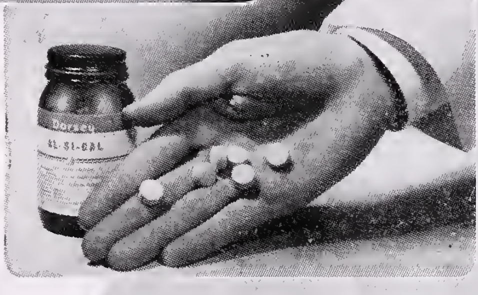


AND TABLETS



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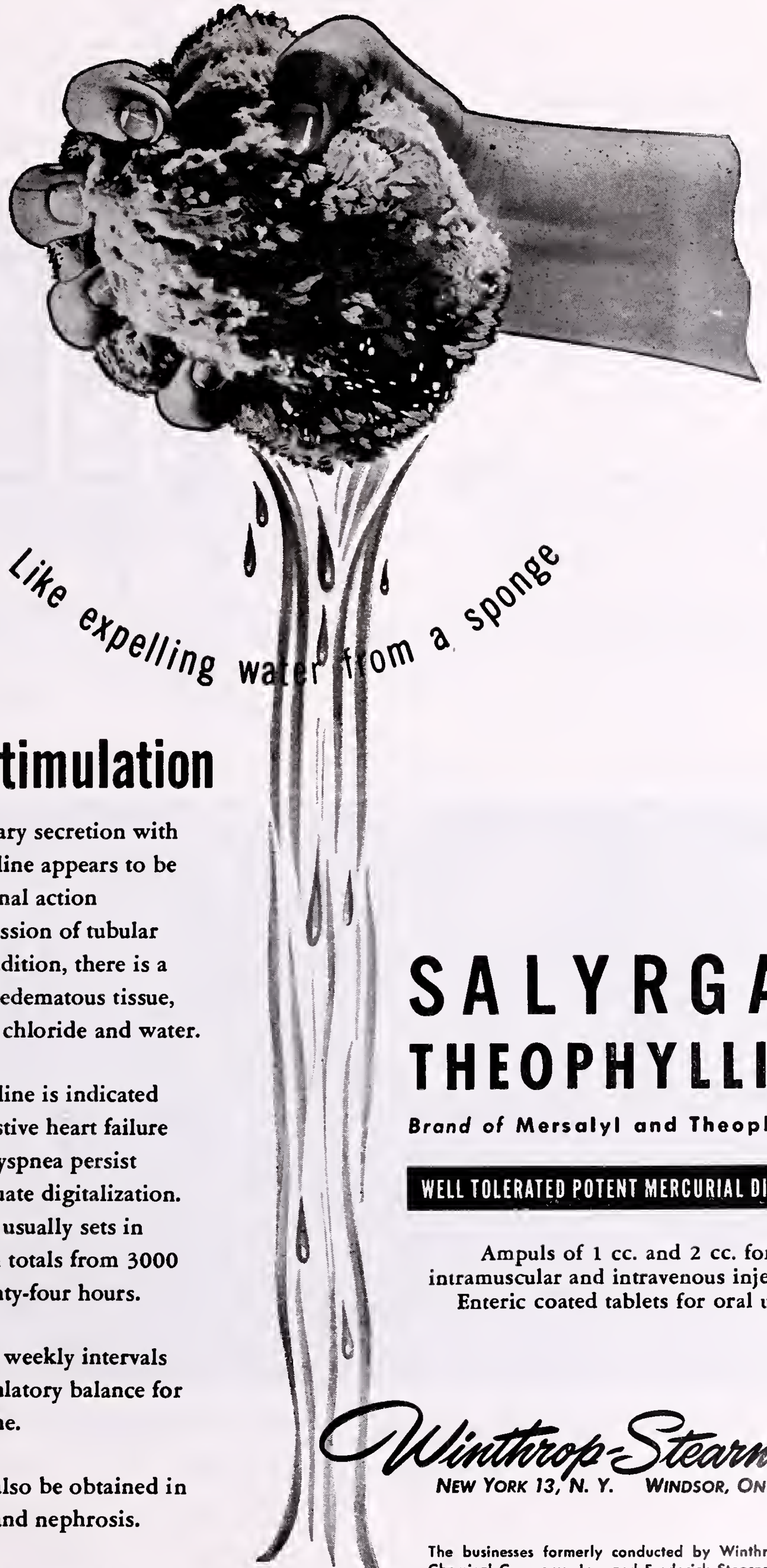
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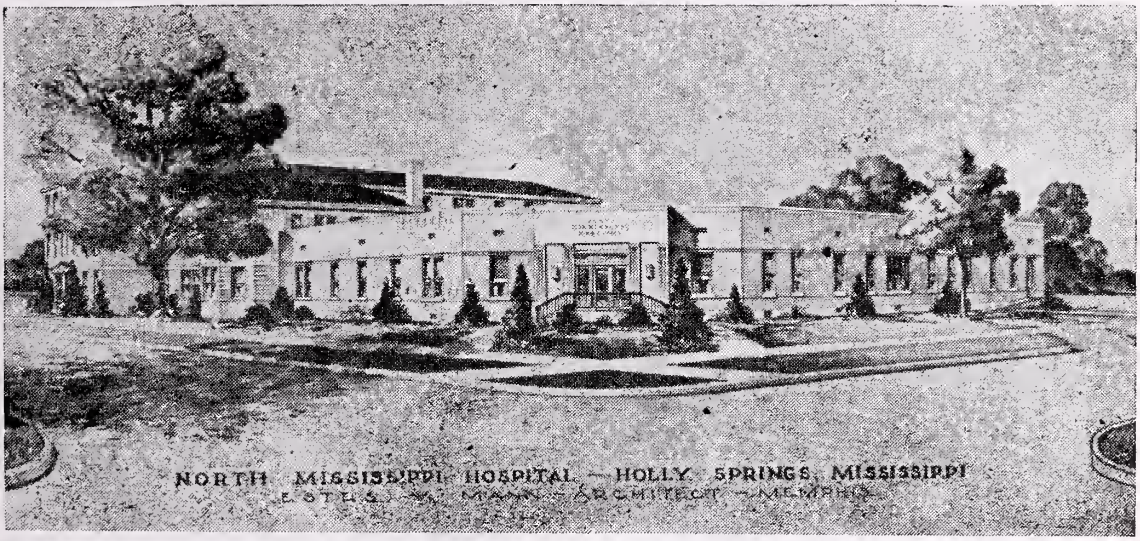
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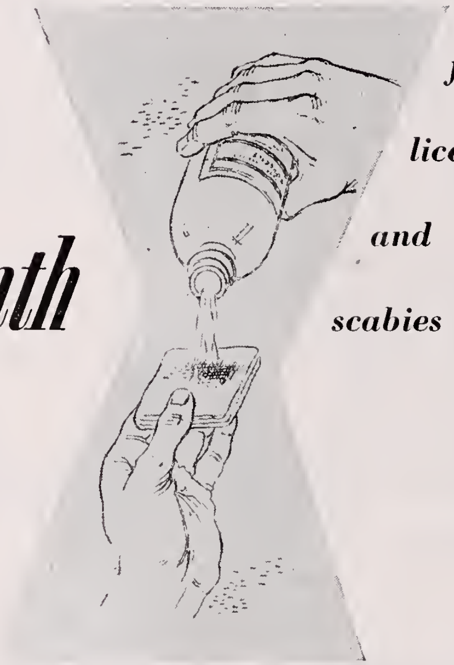

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The Diagnosis and Management of Tumors of the Chest*

RICHARD H. MEADE, JR.
Grand Rapids, Michigan

One death out of each one hundred that occurs in this country today is due to primary carcinoma of the lung, and so this tumor is obviously the most important one that is found in the chest. However, there are many other tumors in the chest which are not malignant. In discussing chest tumors only those originating within the chest will be considered, and no attempt will be made to classify and describe all of these. This presentation will be concerned primarily with the tumors with which the author has personally dealt.

The tumors of the chest can be simply divided into the malignant and benign tumors and cysts of the lungs and mediastinum, including those of the esophagus. The malignant tumors far outnumber the benign ones in all regions of the chest and this is particularly true of the lungs. In the mediastinum sarcoma is more common than carcinoma, but in the lungs the reverse is true, and to a striking extent. Sarcoma of the lung is rare, whereas carcinoma of the lung is second in frequency only to carcinoma of the stomach, and in some large hospitals it ranks first. At least ten per cent of all carcinomas are primary in the lung. Men are affected from three to five times as frequently than women.

That carcinoma of the lung is bronchogenic is quite generally accepted although occasionally a case is recorded which offers some evidence of alveolar origin. Although these tumors arise from bronchial epithelium many of them do not involve the bronchi that are accessible to the bronchoscope and are so far from the larger bronchi that no bronchial symptoms are produced. In fact a number of such tumors may give rise to no symptoms at all until they become very far advanced. Because of this fact these tumors can only be discovered on x-ray examination of the chest. The increasing use of routine x-rays of the chest which received such an impetus during the war is a most important aid in discovering silent tumors of the chest of all kinds but especially in demonstrating evidence of the silent cancers. Before going into a discussion of the diagnosis of lung cancer it is important to bring out now the fact that the diagnosis is so seldom made in the early stages of the tumor that only about one out of every five patients with cancer of the lung who gets to the chest surgeon can have curative surgery. The others fail to have symptoms that take them to a doctor, or else the doctor fails to recognize the disease in time. The first thing that must be borne in mind is that cancer of the lung is a common disease. The second is that one must suspect it in all patients over forty who have chest conditions that do not clear up promptly and for which no other definite cause can be found.

The symptoms and signs of cancer of the lung can be understood better when one considers the progress of the disease and the structures which are involved. The tumors that involve the larger bronchi first cause an irritation of the involved bronchial mucosa and cough is the most common and the earliest symptom. As the tumor advances bronchial secretion increases and exudation changes its character. There may be a little bleeding which causes streaking of the sputum with blood, or the expectoration of small quantities of blood. Only in advanced cases, and when a vessel is eroded does there occur the large hemorrhages which are frequently seen in patients with bronchiectasis or tuberculosis. As the tumor grows it produces more and more bronchial obstruction. This will give rise to a wheeze in time, and the pain. When the obstruction interferes with expectoration of the bronchial secretions infection may develop and give rise to a pneumonitis, to lung abscess, or to bronchiectasis. When the obstruction becomes complete atelectasis of the lung distal to it will develop. It is at this point that the first definite x-ray changes may appear. (Fig. 1.) Before this time the changes noted in the x-rays may be very slight and indistinct. With increasing bronchial obstruction more lung becomes atelectatic giving the characteristic dense shadow in the x-ray of retraction of the mediastinum to the affected side and elevation of the homolateral diaphragm. The symptoms and signs at this time are striking with cough, chest pain, and dyspnea and the physical signs of retracted chest, dullness, and diminished breath sounds. When there is associated infection there will be fever and often chills and sweats.

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*Presented at meeting of the Mid-South Post-graduate Medical Assembly in Memphis, February, 1947.

Although the patient has all of these symptoms and signs no definite diagnosis can be made without the use of the bronchoscope and, or, the cytological study of the sputum or bronchial secretions for tumor cells. The great majority of tumors in the larger bronchi are accessible to the bronchoscope and visualization and biopsy can usually be accomplished. When an upper lobe bronchus is involved the tumor may be out of reach of the bronchoscope but from it one should obtain tumor cells in the sputum or in the secretion obtained on bronchoscopy. When all of the bronchogenic carcinomas are considered it is now believed that only half of them are accessible to the bronchoscope but the examination of the sputum or bronchial secretions by experts in this field has increased the percentage of correct diagnosis to more than 85 per cent.

When the tumor does not actually invade the bronchial mucosa but causes pressure on it from without there may be few symptoms or none at all until the obstruction becomes sufficiently great. There may be some dyspnoea and some indefinite pain. The x-ray in these cases may show nothing or may show an infiltrative process extending out from the hilum. Bronchoscopy in the early stage will show nothing abnormal but as the process increases there will develop evidence of narrowing and fixation of the bronchus.

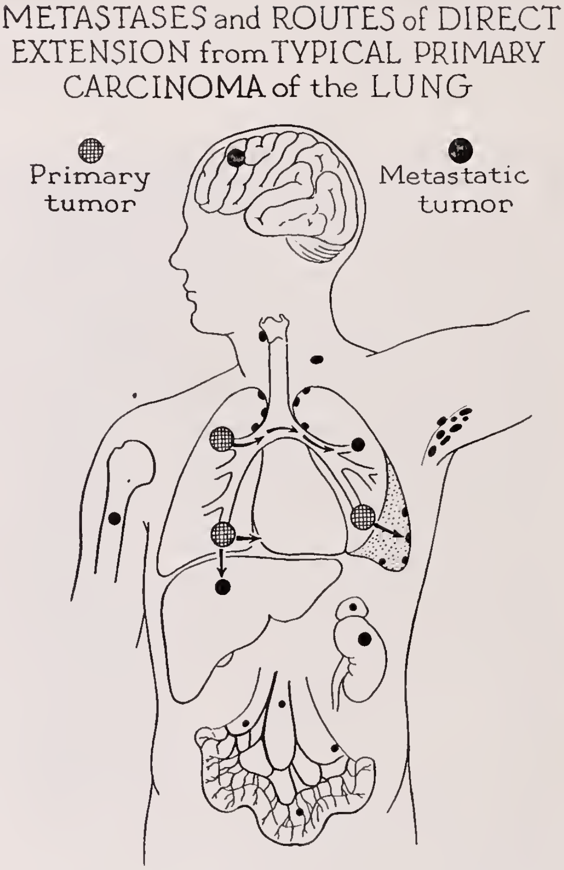
METASTASES and ROUTES of DIRECT EXTENSION from TYPICAL PRIMARY CARCINOMA of the LUNG
Primary tumor
Metastatic tumor

Figure 2—Metastases and Routes of Direct Extension from Typical Primary Carcinoma of the Lung. Modified from Fig. 485 in "A Textbook of Surgery by American Authors, edited by Frederick Christopher." W. B. Saunders and Company, Philadelphia, 1945.

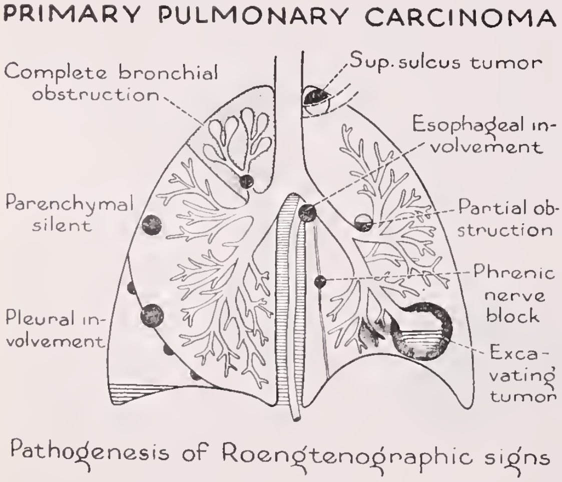
PRIMARY PULMONARY CARCINOMA
Complete bronchial obstruction
Sup. sulcus tumor
Esophageal involvement
Parenchymal silent
Partial obstruction
Phrenic nerve block
Pleural involvement
Excavating tumor
Pathogenesis of Roengtenographic signs

Figure 1—Pathogenesis of Roentgenographic Signs in Primary Pulmonary Carcinoma. Modified from Fig. 486 in, "A Textbook of Surgery by American Authors, edited by Frederick Christopher." W. B. Saunders and Company, Philadelphia, 1945.

Histologically these tumors are usually divided into three main groups. The most common is the squamous cell carcinoma and this is the one that most often involves the larger bronchi. Adenocarcinoma and undifferentiated cell carcinoma are the two types and more often involve the tissues away from the main bronchi. The latter is most often infiltrating and frequently involves the hilar region. In general the squamous cell tumors grow the slowest and the best results have been obtained in the treatment of them.

Because the metastases of primary cancer of the lung may produce symptoms long before it does, one must be aware of the most common sites and of the changes produced. (Fig. 2). Although the adrenal gland is one of the most frequent sites of metastases, being more often involved by primary cancer of the lung than by any other, the recognition of this fact is seldom possible. The other common sites are the mediastinum, the brain, the supraclavicular and axillary lymph glands, and the liver. So frequently is the brain involved that neurosurgeons never operate on a patient with a brain tumor without first considering the lung as a source of it. Unfortunately many of the metastases are silent until some time after the lung has been removed. The lymph gland involvement is the easiest to detect and should always be carefully investigated. Except in advanced cases the liver may not be obviously involved but any patient with an enlarged liver and primary cancer of the lung should be considered to have metastases until other cause for the enlargement can be established. Other striking evidences of extension of the cancer beyond the bounds of certain operability are the involvement of the recurrent laryngeal nerve as shown by vocal cord paralysis, of the phrenic nerve as shown by flouroscopic evidence of paralysis of the diaphragm, and by extension of the tumor into the chest wall, or parietal pleura. This last site of extension can often be detected by x-ray examination after the fluid which has formed has been partly replaced by air. By putting the patient in various positions the parietal nodules may be well outlined in the films. When such evidence of extension can be demonstrated the patient will be spared the trouble and expense of exploratory operations. Although the finding of pleural fluid is often evidence of extension of the tumor many feel that it should not be an absolute contraindication to exploration unless tumor cells can be found in it, as a nonhemorrhagic fluid might be due to an associated inflammatory process. The finding of bloody fluid however is almost constantly a sign of inoperability and few thoracic surgeons would operate on such patients.

Curative surgery for primary cancer of the lung dates back only to 1933 when Dr. Evarts Graham removed the lung of a patient with this disease. This man is still alive and well and practicing obstetrics. Since 1933 many patients have been cured by radical surgery and it has long been agreed that this is the only way in which cure can be accomplished. Although at present only about one out of five patients is seen early enough in the course of his disease to allow radical surgery to be done, a certain number of the others can have palliative surgery which may give them many more months of comparative health. Most thoracic surgeons agree that the natural course of untreated cancer of the lung is so productive of misery that whenever possible the tumor should be removed even if it means going beyond the confines of the lung. So long as all of the tumor-bearing tissue can be removed this should be done.

As there are so many patients for whom surgery cannot be considered it is important that the doctor not tell his patient that surgery is the only form of treatment until he has demonstrated that exploratory operation at least is feasible. For those patients not suitable for any operation there are other forms of therapy which at times produce real palliation and should be used. The oldest of these is x-ray therapy and although it usually has no beneficial, objective effect it may at least show the patient that his case is not entirely hopeless. In some instances remarkable improvement has followed its use and life prolonged far beyond the usual expectancy. Although radium implantation has been used for many years it has only been very recently used in massive dosage. At the Veterans Hospital at Hines, Illinois, since 1946 radon has been so used in a large number of patients found at operation to have too extensive tumors to permit their removal. Some of the results have been so striking that it may well offer a valuable form of palliative therapy, but its use is too recent to allow proper evaluation. The intravenous administration of nitrogen mustard (methyl bis) has been used since 1946 and in some of the patients real palliation has been observed. This clinical experiment which is being carried out under the auspices of the National Research Council was first called to my attention by Dr. Carr of Memphis, and although my results have not been as good as his I am continuing to use it. The patient with an inoperable carcinoma of the lung needs our care even more acutely than the others and that responsibility must be faced and must be handled in the most considerate manner.

Sarcoma of the lung is rarely found and most forms are inoperable. Occasionally, it is found as an isolated tumor at a distance from the main bronchi. Such a tumor can be successfully removed. One of these was treated by lobectomy, for a supposed bronchogenic cyst, at Kennedy General Hospital in 1945, and the patient has remained well since then.*

Metastatic tumors of the lungs are of frequent occurrence and in the great majority of instances are multiple and operation for them is not to be considered. Occasionally however solitary metastases occur following the removal of the primary tumor and remain stationary, or grow very slowly, for a long time. Churchill in 1933 removed a solitary hypernephroma metastasis by lobectomy one year after a nephrectomy had been done for the original tumor and the patient was well in 1945. Since then a number of solitary metastatic tumors of different types have been treated by lobectomy with good results. Decision as to the use of surgery in such circumstances requires most careful study.

Benign tumors of the lungs are far less common than the malignant ones but do make up an important group. As with the carcinomata they practically always arise from the bronchial walls and most of them involve the larger bronchi. Because of their location they seldom can be picked up on routine chest x-rays but so often do they cause bleeding that the patient quickly seeks medical advice. When bleeding does not occur the tumor is usually silent until it produces definite obstruction and then the symptoms are similar to those produced by carcinoma of the bronchi. The exact diagnosis can only be established by biopsy through the bronchoscope but the great majority can be readily reached.

The tumor which is the most discussed of the so-called benign group is the bronchial adenoma. It is of particular importance because it at times acts as a malignant tumor and many surgeons believe that it should be considered a potentially malignant one. It is covered with intact mucous membrane in its youth and may grow considerably without causing any ulceration. It is very vascular as a rule and when biopsies are taken alarming hemorrhage may occur. It is usually located in one of the larger bronchi. It may be either sessile, or pendunculated, but the former is more common. Frequently the main mass of the tumor lies below the surface of the bronchial wall, as does an iceburg below the water, and although the bronchoscopic aspect of the tumor is small its true extent may be large. Those tumors which do not project into the bronchial lumen may not be detected until the lobe or lung, containing it is removed because of the bronchiectasis which has developed distal to the point of bronchial obstruction. In such cases the x-ray may show shadows which later are found to coincide with the location of the bronchial tumor. Histologically these tumors were once considered to be adenocarcinomata but when a large number of them did not recur for many years after their bronchoscopic removal a restudy of them led to the conclusion that they are benign tumors. To the uninitiated these tumors do resemble carcinoma as, typically, they are characterized by large areas of small cells with deeply staining nuclei, often in irregular arrangement and sometimes in alveolar formation. The finding of cartilage and of bone in them is not uncommon and has led to their being considered, by some, as mixed tumors. The cells do not show mitotic figures and are very similar in appearance. In the few cases in which there has been definite evidence of malignancy there have been extensions to regional lymph glands and in rare cases metastases to distant sites.

Those tumors with pedicles and small areas of attachment to the bronchial wall can be treated by bronchoscopic removal, but they must be carefully followed after this for evidence of recurrence. When the tumor is causing bronchial obstruction and there is infection beyond it, which in itself requires radical surgery, all agree that lobectomy, or pneumonectomy, should be done. If the tumor is found to occupy such a position that single lobectomy would remove it, few surgeons would fail to advocate such a procedure, as the risk of the operation is slight, and the resulting disturbance minimal. However, when the tumor is situated in such a way that only total pneumonectomy could be done, some surgeons feel that such a radical procedure is not justified when the chance of the tumor becoming malignant is so small. In such instances the tumor is treated by radon implantation or by electrocoagulation through the bronchoscope. The most careful follow-up must be carried out and the area of the tumor carefully studied through the bronchoscope at short intervals. When the tumor fails to respond to such treatment, or recurs, then pneumonectomy must be done.

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*Last report from patient on 9-1-48 when x-ray of chest still showed no evidence of disease. The tumor was a neurogenic sarcoma involving the upper lobe and the preoperative diagnosis was a "bronchogenic cyst."

A tumor which grossly cannot be distinguished from the adenoma is the cylindroma. This tumor also frequently resembles the adenoma microscopically but can be differentiated. Of all the so-called benign tumors it is the one that most often involves regional lymph glands and sends out metastases.

Fibroma of the bronchus may closely resembles an adenoma on gross examination, but it is more often pedicled and thus usually more amenable to removal through the bronchoscope. When it cannot be removed in this way it may still be removed by bronchotomy without sacrifice of pulmonary tissue, in the rare cases, as first shown by Eloesser and more recently by Langston. The one bronchial fibroma seen at Kennedy General Hospital required a pneumonectomy because of its position even though it was attached by a long pedicle to a small branch of the right upper lobe bronchus.

Of the other benign tumors of the lung only two more will be discussed. These are the chondromas and the hemangiomas. The first include the simple chondromas and the hamartomas. They are isolated tumors which rarely cause symptoms and are usually found on routine chest x-ray films as well circumscribed, rounded shadows. They are more often seen in the outer parts of the lung and seldom involve the walls of the larger bronchi. The pure chondromas are rare. Hamartomas are cartilaginous tumors in which there are rudimentary bronchi, fat and smooth muscle. The name was given by Albrecht in 1904 to certain tumors of the liver, and he defined such tumors as those which contain the normal components of an organ in abnormal quantity, arrangement, and degree of differentiation. The great majority of these are only diagnosed after a lobe has been removed because of the presence in the x-ray of an undiagnosed localized shadow which might have been due to a malignant tumor. They are true benign tumors. The second benign tumor that must be discussed here, although the author has had no personal experience with it, is the hemangioma of the lung. When it is of appreciable size the arteriovenous fistulae will produce cyanosis, clubbing of the fingers and polycythemia. X-ray examination shows a shadow which is somewhat rounded, is in connection with the pulmonary vascular markings and on angiocardiography the exact diagnosis can be established. Treatment by lobectomy is curative.

Although the cysts that are found in the lung are rarely neoplastic they may often be confused with tumors, and are rarely associated with carcinoma. The air-filled ones are more apt to be considered tuberculous cavities than tumors, but those in which the cyst has become filled with fluid, or débris, cast solid, circumscribed shadows on the x-ray films. The correct diagnosis in these latter cases can only be made by operation. With the increasing use of routine chest x-rays it is becoming apparent that pulmonary cysts are not the rarities they were once considered to be. They are asymptomatic except when they become infected or cause pressure on adjacent structures. The infected ones are not infrequently treated by drainage, and only when this fails to cure does the true nature of the lesion become apparent. Surgical excision is the only curative treatment. This may be accomplished in some cases without sacrificing pulmonary tissue but more often it will be necessary to do a segmental, or complete, lobectomy. In rare cases multiple cysts will make pneumonectomy necessary.

Tumors and cysts of the mediastinum amenable to surgical extirpation are much less common than the inoperable malignant primary and secondary tumors found in it. The metastatic tumors of the mediastinum come from many sources, but the lung furnishes the most important site of origin. So frequently is the mediastinum invaded in untreated cancer of the lung that until relatively recent times these metastatic tumors were considered primary and the true primary cancer of the lung thought to be secondary. Only since it has been possible to diagnose a primary cancer of the lung in its early stages, has it been possible to show that the carcinoma found in the mediastinum is secondary to that in the lung. The primary malignant tumors of the mediastinum are mainly those arising in the lymphatic tissue. This is the large group of lymphomas, including lymphosarcoma and Hodgkins disease. Primarily they produce symptoms by pressure on adjacent structures, but later may be invasive. In the x-ray can be seen the rounded, or irregular, enlargement of the mediastinal shadow. They occur most frequently in the superior mediastinum. Often the presence of enlarged lymph glands in the cervical, or axillary, regions will permit the establishment of the correct diagnosis by biopsy. As these tumors are radiosensitive, x-ray therapy is often used to help establish the diagnosis when no glands are available. If there is no immediate response to x-ray therapy it should not be continued, and exploratory thoracotomy should be done. There is great danger in carrying on x-ray therapy for a long period of time in the absence of improvement, as it may make operation more difficult, and it allows the tumor to grow. Obviously, before operation is considered, a careful study of the patient by means of fluoroscopy, special x-rays and even angiocardiography should be made, as at times the mediastinal shadow may be due to an aneurysm, or other abnormality, for which surgery is not indicated. If the diagnosis of malignant lymphoma is established, x-ray therapy should be used. Aside from the malignant tumors involving the lymphatic structures in the mediastinum, are those arising in the thymus. These tumors are usually highly invasive and surround the great vessels. They also metastasize. One such tumor associated with Myesthenia gravis was operated upon at Kennedy General Hospital but only a part of it could be removed. Another important malignant tumor in this region is the malignant embryonic tumor, teratoma or dermoid cyst. Although an occasional one can be surgically removed few of these result in cures.

Benign tumors and cysts of the mediastinum produce symptoms by pressure on adjacent structures. When they are small their presence may only be discovered as a result of a routine chest x-ray. If the shadow is in the posterior mediastinum the most likely cause for it is a neurogenic tumor. This tumor is practically never found elsewhere in the chest. The commonest tumor is derived from the sheath of an intercostal nerve, and is known as a neurofibroma. The next most common is the ganglioneuroma, which is thought to arise from the sympathetic nervous system. Other neurogenic tumors occur and their names vary with the pathologist describing them. Most of them grow out into the pleural cavity, but some which arise within the intervertebral foramina extend into the spinal canal as well as into the chest. These hourglass, or dumbbell, tumors often produce marked cord symptoms before they produce any other changes. Although many neurogenic tumors are found only on routine chest x-rays the others produce definite neurological and thoracic symptoms by their pressure on the lung and other structures, and by their involvement of the sympathetic nervous system, or of a peripheral nerve. While they are usually considered to be benign recent surveys of reported cases have shown that about 40 per cent are malignant. This fact alone makes operative intervention imperative when such a tumor is suspected.

Although the neurogenic tumor is the commonest in the posterior mediastinum other tumors and cysts do occasionally occur there. Two dermoid cysts of the posterior mediastinum were removed at Kennedy General Hospital during the war. One of these was in close contact with the esophagus and the only symptom was vague pain on swallowing. X-rays revealed a rounded shadow but its exact nature was not determined until after it had been removed. Although pericardial cysts are usually considered to occur in the anterior mediastinum two of these were found at Kennedy to be situated in the posterior mediastinum. These are filled with clear fluid, and their walls are smooth and lined with flattened epithelium, or no distinct lining can be found. They are not known to become malignant, and rarely cause any symptoms. If their true nature could be determined without operation surgery would not be indicated. As with other cysts, infection can occur, and trouble from that produced, but this is indeed rare.

Next in frequency to the lymphatic tumors of the mediastinum are the dermoid cysts and teratomas, which are almost always found in the anterior portion. They are the commonest forms of benign growths and far outnumber the others. They are congenital in origin, and usually are not recognized until after puberty. Many are picked up on routine chest x-rays but as they increase in size they produce pressure on neighboring structures, and symptoms become increasingly severe. In some instances dermoid cysts rupture into bronchi and the patient coughs up hair, a truly pathognomonic sign. Also when fistulae are formed, infection follows, and the resulting changes will obscure the true nature of the lesion. Until relatively recent times few of these cysts were operated upon in their uncomplicated condition so that drainage, and multiple stage procedures, were common. For some time now they have been recognized at an earlier period, and one stage excision is commonly, and successfully, done. The dermoid cysts, derived from ectoderm, are almost always seen as evenly rounded shadows in the x-ray film. When it has broken into a bronchus and some of its contents evacuated, a fluid level will be seen in the x-ray. The teratomas, derived from three germinal layers, are usually solid tumors but some are cystic. They usually cast lobulated shadows, but at times may grossly resemble dermoid cysts. Many more of them are malignant than are the dermoids and even when such a change has not taken place they may not be so perfectly encapsulated, and so present real difficulties in their removal.

Bronchogenic cysts of the mediastinum are less frequently encountered than those of the lung but have been found with increasing frequency as the use of routine chest x-rays has been extended. Although most frequently found in the posterior part of the superior mediastinum in the region of the bifurcation of the trachea, they are discovered elsewhere at times. Rarely do they give rise to symptoms, but, as the shadows they cast in the x-rays cannot be definitely diagnosed, they must be explored and removed if possible. Only rarely does the apparent risk of removal seem to outbalance the need for doing so. This was true in one of our cases at Kennedy General Hospital.

Many other varieties of tumor occur in the mediastinum but they are far less common than those already considered and can be differentiated from them only by biopsy or by study of the excised tissue. Although the great majority of mediastinal masses are malignant, and only the radiosensitive ones of these can be affected favorably, there still remain many benign tumors and cysts which are amenable to surgery. Of those that can be removed more than a third would become malignant if allowed to grow unmolested. Now that the risk of thoracic exploration has become so slight no patient should be denied the opportunity of cure when he is found to have a mediastinal mass that does not respond promptly to x-ray therapy.

The other structure within the chest that will be considered is the esophagus. It is affected by almost all of the tumors and cysts which have already been considered. As with the lung its most important and most common one is cancer, and it is about half as frequently encountered as it is in the lung. Also men are many times more frequently affected, except when the lesion involves the upper segment and for this portion the frequency is far greater in women. Except for the cancer involving the lower end, when it spreads from the gastric cells, the type is epidermoid. When it does arise in the stomach the cancer is an adenocarcinoma. It is found more often in older people than is cancer of the lung, but also may attack young people. Of the small number seen at Kennedy General Hospital one was in a negro boy of nineteen, and was so far advanced when finally recognized that curative surgery could not be considered. Dysphagia is the most important, and commonest, symptom, and whenever found must be considered as due to cancer until the possibility of this has been excluded by the most complete examination, including esophagoscopy. In the early stages of cancer of the esophagus the most careful x-ray study may fail to reveal it, but direct examination, through the esophagoscope, will detect it and make curative surgery possible. Prior to 1938, when Adams and Phemister performed the first successful esophagogastrostomy after excision of the cancer-bearing esophagus, only a few patients had survived radical excision of their cancer and then they were dependent upon gastrostomies for feeding. Since 1938 an increasing number of successful extirpations have been done and the patients left with the continuity of their gastro-intestinal tracts reestablished. At present all parts of the esophagus can be successfully attacked. So, the problem of cancer of the esophagus is exactly the same as that of cancer of the lung, recognition of it in the early stage.

While cancer is the most common and most important tumor involving the esophagus, benign tumors and cysts are occasionally encountered. Various connective tissue tumors have been found and removed from the esophageal wall whereas others have required operations similar to those for cancer. At Kennedy a fibromyoma was successfully enucleated from the lower esophagus and one from the upper segment. The removal of the latter destroyed too much of the blood supply to the esophagus and death followed. When any doubt exists as to the viability of the organ, resection, followed by esophagogastrostomy, should be done. A dermoid cyst of the wall of the lower esophagus was successfully treated by this radical procedure, and a bronchogenic cyst of the lower wall safely enucleated.

So it is seen that although a great variety of tumors of the chest are recognized and can be successfully removed there remain the malignant lymphomas for which there is now only palliative treatment. The most important group of all are the primary cancers of the lung. For them there is successful treatment but this success depends upon the ability to remove them in their early stages. The greatest problem that confronts us today in regard to tumors of the chest is the recognition of cancer of the lung in its operable stage.

Abnormal Uterine Bleeding*

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THE MOST COMMON gynecological complaint is irregular vaginal bleeding. Due to the education campaign of the various cancer prevention societies, a woman now consults her doctor more frequently when the pattern of her menstrual cycle is broken. The doctor, in his haste to diagnose or rule out malignancy of the reproductive system, too often restricts his examination to investigation of the cervix and endometrium, sometimes overlooking the real cause of the abnormal flow.

In the interest of clarity and brevity, the causes of abnormal uterine bleeding may be classified as follows:

1.) complications of pregnancy; 2.) systemic diseases; 3.) organic lesions in the reproductive tract; 4.) functional uterine bleeding.

Complications of Pregnancy

Millen and Shepard[1] found, in a review of 3,956 cases of premenopausal bleeding, that 861, or 21 per cent, were due to complications of pregnancy. In the child-bearing age some complication of pregnancy must be considered in every case of irregular menses.

The most common complication encountered in pregnancy is abortion, either threatened, incomplete, or complete.

Ectopic pregnancy is an abnormality of pregnancy which usually causes abnormal uterine bleeding. Hagood and Otts[2] reviewed thirty ectopic pregnancies occurring in the Jefferson-Hillman Hospital over a two-year period and found that 83.3 per cent exhibited vaginal bleeding as a symptom. This figure corresponds almost exactly with the number of ruptured ectopic pregnancies in the series. An undisturbed ectopic pregnancy does not cause vaginal bleeding. Usually no symptoms, other than those of pregnancy, are present.

Hydatiform mole and chorionepithelioma are placental tumors; the former usually benign and the latter highly malignant. Both cause abnormal uterine bleeding. Baker[3] states that the most common symptom of chorionepithelioma is bleeding, after abortion or expulsion of a mole. Further bleeding after a curettage is almost pathognomonic. Two cases of chorionepithelioma have been seen on the gynecological service of the Hillman Hospital during the past two and one-half years. The presenting symptom of each patient was abnormal uterine bleeding.

Subinvolution of the uterus is a complication of pregnancy that occasionally causes menorrhagia. The enlarged uterus becomes retroverted, uterine congestion develops, and results in prolonged menstruation.

For the sake of completeness, placental site bleeding should be mentioned. After the ovum becomes fertilized, it migrates to the uterine cavity and burrows into the prepared endometrium. At the time of implantation, slight bleeding may be noted by the patient. No special significance is attached to this except that the patient may count this phenomenon as her last menstrual period and thereby cause the expected date of her confinement to be miscalculated.

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*Read before the Northeast Mississippi Medical Society, Amory, Miss., September, 1948.

In diagnosing abnormal pregnancy states, a careful history and physical examination are necessary, just as they are in diagnosing abnormal uterine bleeding due to any other cause. Often a dilatation and curettage will be necessary and if chorionic villi are found in a prepared microscopic section, the diagnosis is clear. However, if chorionic villi are absent, extrauterine pregnancy is not ruled out. Whitacre and Bryan[4] have recently proposed a diagnostic aid in ruptured ectopic pregnancies, which is the identification of hematin in the peripheral blood by spectroscopic examination. This test gives a positive reaction if blood is present in any body cavity and therefore is useful only in cases of ruptured ectopic pregnancies.

Systemic Diseases

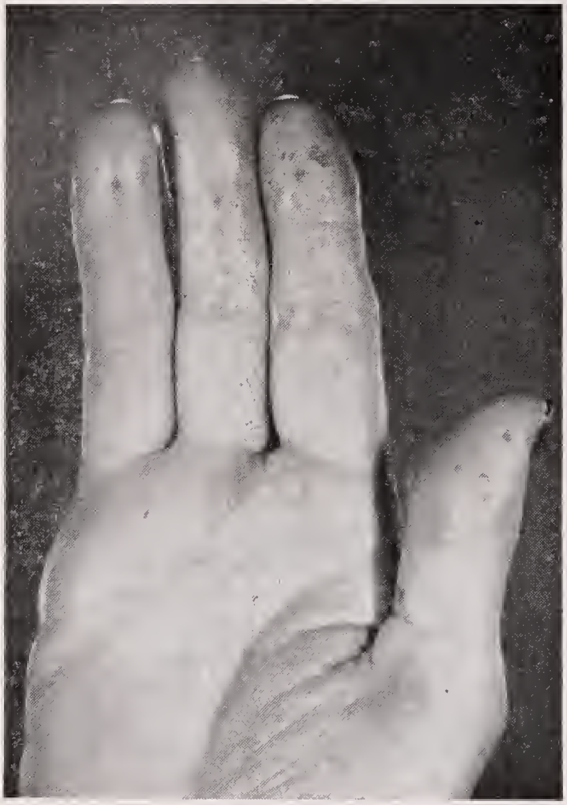
Accumulating data indicate that uterine bleeding can derive from systemic as well as purely local disturbances. The systemic diseases most commonly associated with abnormal uterine bleedings are: Diabetes, mumps-oophoritis, malaria, typhoid fever, tuberculosis, syphilis and the blood dyscrasias. Buxton[5], in reporting ten cases of blood dyscrasias (aplastic anemia, purpura haemorrhagica, lymphatic leukemia) stated that all ten patients had the presenting symptom of menorrhagia. Seven of these ten patients were seen by gynecologists before having complete blood studies made.

The following are cases of abnormal uterine bleeding due to systemic diseases that have come under my observation during the past two years.

Case 1. On June 19, 1946, a thirty-year-old colored female, whose chief complaint was "trouble with menses," came under my observation. The patient had menstruated regularly since the age of fourteen until June 9, 1946, when she began to menstruate and continued to flow three days, which was, she said, a normal period at her regular time. After cessation of menstruation for one day, bleeding returned and continued to the time of our examination, seven days later. The first abnormal finding noted on physical examination was asymmetry of the pupils, the left one being smaller than the right. Both pupils were fixed. The remainder of the physical examination, including inspection of the lower genital tract and bimanual examination of the pelvic organs, revealed no abnormalities to account for the patient's bleeding. The blood Wassermann and spinal fluid Wassermann tests both gave positive reactions. The patient was referred to the Rapid Treatment Center and received more than 8,000,000 units of penicillin. Since receiving the treatment for syphilis, the patient has had regular, normal periods for two years. Pelvic examination on several occasions revealed no abnormalities.

Case 2. On June 3, 1947, a thirty-three-year-old colored female was admitted to the gynecological service of the Hillman Hospital with the chief complaint of menorrhagia one month in duration. She had been married twelve years, had never been pregnant, and had had no previous operations. Her menstrual periods followed a regular twenty-eight-day cycle and lasted six days until the onset of her present illness. The physical examination revealed no abnormalities except a freely moveable tumor of the uterus which appeared to be about the size of a twelve-week pregnancy. The tumor was firm, and irregular in shape. There was an ashen gray color of the patient's skin, suggestive of a blood dyscrasia. A blood count revealed the patient to have acute myelogenous leukemia. This disease caused the patient's death six months later. She had, undoubtedly, a fibroid; however, it was the leukemia which caused her death, and perhaps her bleeding.

Case 3. A fifty-five-year-old white female entered the hematology clinic at the Medical College of Alabama with the chief complaint of red spots on her tongue, face, palms of hands and soles of feet, and recent nosebleeds. The patient stated that her menstrual periods began at the age of thirteen, occurring every twenty-eight days, and lasting six or seven days. From the onset of her periods she had always bled excessively and passed many clots. This continued until she was forty-seven, at which time artificial menopause was induced by implantation of radium in the uterus. Examination revealed large, varied red-purple areas of telangiectasia on the tongue, skin of the face, palms of the hands, finger tips (see figure 1) and soles of the feet and toes. The diagnosis was made by the telltale telangiectatic spots on the skin, particularly the soles of the feet and palms of the hands. The blood dyscrasia undoubtedly accounted for her menorrhagia during menstrual life.



Note hemorrhagic telangiectatic spots on finger tips

Hereditary hemorrhagic telangiectasia, also known as Rendu-Osler-Weber disease, is a rare familial disease seen in both men and women. In the female it causes menorrhagia. An interesting case of this disease has recently been reported by H. B. Kennedy[6].

These few cases have been cited to emphasize the importance of careful history and physical examination to determine the cause of abnormal uterine bleeding. As Frank[7] has stated, "Although empiric endocrine therapy or empiric curettage may be effective therapeutic shortcuts, they not only palliate and give a false impression of benefit during which time a thorough diagnostic search may be under way."

Meigs [8] states, "Every year a case of abnormal uterine bleeding necessitating spleenectomy and not hysterectomy is seen in the wards of our service."

Organic Lesions In The Reproductive Tract

Malignancies are by far the most serious lesions of the female reproductive system. TeLinde [9, 10, 11, 12] has noted the frequency with which postmenopausal bleeding is associated with malignancy in the female genital tract. Organic lesions associated with abnormal uterine bleeding may occur, however, at any age: before puberty, during menstrual life, or after the menopause.

Uterine bleeding in the first decade of life is usually due to an ovarian tumor. However, it may be due to a tumor of the pituitary, adrenal, or pineal gland. Careful examination of these glands and physiological tests for their proper function are necessary to obtain a correct diagnosis.

Vulvovaginitis should be considered in the prepubital age group. At this age the vaginal mucosa is similar to that found in the postmenstrual state. The blood vessels are covered with only six to eight layers of stratified squamous epithelium instead of twenty-four to forty, as found in the age group that menstruates. The subepithelial layer is easily penetrated by organisms and bleeding occurs, due to inflammation and erosion of the superficial vessels.

In the second decade of life, the most common causes of abnormal uterine bleeding are endocrine disturbances and inflammation. Millen and Shepard[1], in reporting their studies of 3,956 cases of abnormal uterine bleeding in women in the reproductive age, state that 861 were due to abnormalities of pregnancy; 663 were due to pelvic inflammatory diseases; and 1,018 were due to either fibroids alone (938) or fibroids associated with adenomyoma, ovarian tumors and polypi of the cervix and uterus.

Infection ran third as the most frequent cause of abnormal uterine bleeding between the ages of fourteen and fifty. Bleeding results from infection in one of two ways. The gonococcus, in migrating from the vagina to the fallopian tubes, traverses the uterine cavity, causing a low grade endometritis and often bleeding. The most frequent cause of bleeding due to pelvic inflammation, according to Meigs[8] is that the ovaries are bound in adhesions and cannot ovulate. Follicle cysts are formed that produce excessive amounts of estrogen and thus cause bleeding. The bleeding is functional in character, although an organic lesion is responsible.

Of the organic lesions, malignancy is the most important. The menopausal patient is sometimes treated by endocrine therapy without a thorough, careful examination, the danger of which is obvious. The cause of bleeding after the menopause is cancer in approximately fifty per cent of patients. However, cancer has occurred, and does occur, before the menopause. In a recent study of 485 cases of cancer of the cervix seen at the Jefferson-Hillman Hospital Tumor Clinic over a ten-year period, 150 or approximately one-third of the patients were under the age of forty; 296 or nearly two-thirds were under the age of fifty. This study reaffirms the fact that cancer of the cervix is seen more frequently in the menopausal years. The average age of menopause is forty-seven. The age at which the largest incidence of cancer of the cervix occurs is forty-eight.

The demonstrable lesions that cause irregular vaginal bleeding are classified as benign and malignant by most authorities. Either of these lesions may be seen in any age group. Infection and pregnancy are more common in the early years of reproductive life and malignancy, in the later years of menstrual life and in the postmenopausal era.

The benign causes are: senile vaginitis, ulceration due to pessary, vaginal adhesions, prolapse of the cervix with ulceration, urethral caruncle, chronic cervicitis, cervical polypi, cervical stenosis, pyometria, endometrial polypi, uterine fibroids, ovarian tumors, endometriosis, and adenomyosis.

The malignant diseases that cause abnormal uterine bleeding during menstrual life and later are: malignancy of the vagina, carcinoma of the cervix, sarcoma and carcinoma of the fundus, and malignancy of the ovary.

The malignancies of the female genital tract seen in the tumor clinic of the Jefferson-Hillman Hospital during the past ten years are listed in Table 1. Nearly all of these patients came to the clinic with the chief complaint of abnormal uterine bleeding.

If the patient has had a supracervical hysterectomy and bleeds subsequently, careful inspection of the cervix and biopsy should be done without delay. Twenty-six of our 485 cases of cancer of the cervix were found in the cervical stump. Eleven occurred within three years after removal of the uterus. The remaining fifteen occurred from three to twenty-nine years following hysterectomy. All cases had "spotting" as the presenting symptom.

The tumors of the ovary seen in our clinic which produced the symptom of menorrhagia were theca cell, adenocarcinoma, papillary cystadenocarcinoma, and granulosa cell tumors.

In cases of abnormal bleeding from organic lesions in the reproductive tract it is most important that an accurate and early diagnosis be made. Too much emphasis cannot be placed on the importance of careful, detailed history and physical examination, careful inspection of the cervix in a good light, together with thorough bimanual examination of the uterus and adnexa. If 559 malignancies listed in Table 1, the diagnosis could have been made by careful inspection on 498 patients (89.6 per cent) provided biopsy of all suspicious lesions had been done.

In patients in whom the cause of the bleeding is undetermined following examination, a dilatation and curettage and examination under anesthesia should be done before any therapy is instituted. The proper early diagnosis of the cause of bleeding is the important feature. Treatment is fairly standard and well known for the different lesions.

Functional Uterine Bleeding

Functional uterine bleeding is abnormal uterine bleeding for which no pathological cause can be found. The exact mechanization is not understood and treatment, for that reason, has not been standardized..

The endocrine relationship of the normal menstrual cycle is explained by most authorities on the following basis. The anterior lobe of the pituitary gland secretes a follicle-stimulating hormone. This hormone acts on the ovary, causing a Graafian follicle to ripen and secrete estrogen. This estrogenic substance acts on the endometrium and produces proliferation, or growth of the endometrial lining of the uterus. Growth and proliferation continue to the time of ovulation, which is usually in the middle of the cycle. After rupture of the follicle and liberation of the ovum, the shell of the follicle collapses and a corpus luteum is formed. By stimulation received from the anterior lobe of the pituitary gland, through the luteinizing hormone, the corpus luteum formed in the ovary produces progesterone and acts on the endometrium, changing the pattern to the secretory or progestational phase. If pregnancy does not take place following this elaborate preparation, on or about the twenty-eighth day, the estrogen level diminishes, and, as Hamblen[13] states, "When the estrogen level falls to fifty per cent of its peak during the cycle, a chain of events sets in which results in menstruation."

Functional uterine bleeding occurs most frequently at the beginning or end of menstrual life. It may, however, occur at any time throughout the reproductive years.

Bloody discharge is sometimes noted in the newborn and is explained by sudden withdrawal of estrogen secreted by the placenta. This is withdrawal bleeding. It should not be confused with sarcoma botryoides seen in this age group, and the differentiation may be determined by waiting a few days. Withdrawal bleeding ceases shortly after birth.

Bleeding at puberty is usually due, as in the majority of cases of functional bleeding, to failure of ovulation, called "anovulatory bleeding." In the absence of the follicle-stimulating hormone of the pituitary, follicles do not ripen properly and become atretic or form cysts before ovulation takes place. Estrogen secreted by these follicular cysts, when excessive, produces hyperplasia of the endometrium. The endometrium pattern is of the Swiss cheese type and is thought to be due to a prolonged estrogenic effect.

The same derangement in physiology explains functional uterine bleeding in the menopause. The ovaries become refractive to pituitary stimulation; atretic follicles and cysts are formed, which cause excessive and prolonged estrogenic stimulation to the endometrium, resulting in hyperplasia, and abnormal uterine bleeding.

Ovulation bleeding is quite common. For the past two years we have observed one twenty-four-year-old patient who has had "a little period" of three days' duration ten days after the first day of her normal period. Basal temperature charts show that she is ovulating during the time of her mid-cycle bleeding spells. This phenomenon is produced at time of ovulation by a sudden drop in the estrogen level of the blood stream (fifty per cent below peak). The estrogen level builds back rapidly and the patient continues through the progestational phase without flow. Her mid-cycle bleeding can be made to disappear with estrogenic therapy.

Bleeding that occurs from secretory endometrium, the type of endometrium associated with ovulation, is termed "irregular shedding." This disorder is characterized by the prolongation of the desquamation phase of the menstrual cycle. The onset of the period is normal and, if cessation of menstruation occurred on the usual date, it would be considered a normal period. A curettage of the endometrial cavity after the bleeding has become prolonged reveals secretory endometrium. This type of functional bleeding is not clearly understood, but is thought to be due to some variation in progesterone stimulation. Corpus luteum cysts that persist and produce excessive amounts of progesterone have been suggested by some authorities as the cause of this type of bleeding.

Many forms of treatment have been suggested in the management of functional uterine bleeding, the most perplexing of all menorrhagias. During recent years the hormones have played a large part in its treatment. In managing cases of functional uterine bleeding, it should be remembered that the condition, in a great many instances, is self-limited and spontaneous cures may be expected in a large percentage of cases.

There is no specific therapy for functional uterine bleeding. Measures presently in use are enumerated.

1. A diet, rich in proteins, vitamins C and K, calcium, and iron, has been suggested.
2. Specific endocrine therapy has included practically all known hormones; chorionic gonadotropic hormones made from pregnancy urine, pregnant mare serum, and extracts of the anterior lobe. Estrogen and progesterone are recommended and used by many authorities. Recently androgen therapy in the form of testosterone propionate has been advocated. The exact means by which functional uterine bleeding is cured by these agents is not known. Estrogenic therapy is supposed to raise the estrogen blood level above the bleeding point and thereby suppress bleeding. This appears to be a reasonable explanation in the anovulatory type of bleeding (that which occurs from hyperplastic endometrium). Progesterone will ripen the endometrium and cause it to shed within a normal time limit. This appears to be rational therapy for the irregular shedding type of bleeding.

At most, endocrine therapy is substitution therapy. It may be surmised that many of the glowing reports of cures credited to endocrine therapy are in reality spontaneous cures that occurred while the patients were receiving treatment.

The treatment of functional bleeding with male hormones should be done with caution and such symptoms as hirsutism, hoarseness and hypertrophy of the clitoris anticipated.

Of the different endocrine preparations advocated in the treatment of this condition, estrogen and progesterone, given to stimulate the normal function of the ovaries, appear to be on a more rational basis than the administration of the gonadotropins and androgens.

3. Snake venom has been suggested. Its action on the blood vessels is similar to that of ergotrate preparations, causing constriction and thereby diminshing the flow.

4. Curettage is the most useful procedure in the management of functional uterine bleeding. Stander, Javert and Kuder[14] state that seventy-one per cent of their cases of this disease were cured by curettage alone. The additional knowledge gained in the study of the endometrial scrapings is also of value. Curettage should be employed before any treatment with endocrine preparations is instituted, particularly in the menopausal age group.

5. Radium therapy for functional uterine bleeding in the menopausal age group is favored by many gynecologists but should not be employed during the reproductive period. Its use should be preceded by biopsy of the cervix and microscopic studies of uterine scrapings lest a malignancy be given inadequate treatment.

6. Hysterectomy for functional uterine bleeding is a last resort. It should be employed in patients under forty years of age.

Conclusions

In conclusion, may we stress that many patients bleed abnormally from extragenital causes, and for that reason, a careful detailed history and physical examination, including blood serology and the study of stained blood smears, are necessary. The pelvic examination should include careful inspection of the vagina and cervix in a good light. Inspection alone will reveal the cause of abnormal uterine bleeding in a high percentage of patients, provided biopsy is done on all suspicious lesions, especially on the portions of the cervix that bleed when wiped with a cotton pledget.

Careful bimanual examination of the uterus and adnexa should be made with the patient well relaxed, if necessary, under anesthesia. If the cause of bleeding is not found, a dilatation and curettage is indicated.

Many of the greatest mistakes that are made in the practice of medicine are due to treatment of abnormal uterine bleeding without thorough investigation. Patients who bleed in the menopausal years should not be treated by endocrine therapy or irradiation without first obtaining biopsy readings from the cervix and endometrium. If curettage does not reveal the cause of bleeding and the remainder of the physical examination is within the limits of normal, nothing more should be done. If bleeding should recur, curettage should be repeated. Hysterectomy may be done as a last resort in the latter years of reproductive activity in patients who continue to flood from an undetermined cause.

929 South 20th Street

We wish to express our thanks to Dr. William Riser for allowing us to report his case of hemorrhagic telangiectasia.

TABLE I

MALIGNANT LESIONS IN THE FEMALE REPRODUCTIVE SYSTEM

Seen in the Jefferson-Hillman Tumor Clinic

April 1938 — April 1948

Carcinoma of the vulva	**11**
Carcinoma of the vagina	**2**
Carcinoma of the urethra	**1**
Carcinoma of the cervix	**485**
Carcinoma of the fundus	**28**
Sarcoma of the fundus	**7**
Carcinoma of the ovary	**25**
TOTAL	**559**

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Some Experiences With Early Ambulation*

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THE author began early ambulation following abdominal surgery in January, 1947. It is enthusiastically recommended for three reasons: First is the now well known danger of death or prolonged morbidity resulting from embolism, thrombophlebitis, or hypostatic pneumonia; second, there is the drastic reduction in weakness, suffering, and loss of time from work or school; and third, but by no means least to most of us, is the halving of the usual cost of surgery and hospitalization and the potential doubling of available hospital beds if early ambulation were generally accepted.

Early ambulation was found to be very troublesome when first tried in our private practice; numerous changes in postoperative management were explored before a practical plan was evolved.

It was quickly found that the usual method of waiting until the third or fourth postoperative day to begin "early" ambulation was unsatisfactory because too many patients had by then developed distention, been catheterized several times, and developed incapacitating weakness and mental depression, all of which added up to an uncooperative and even resentful attitude when ambulation was finally attempted. Now ambulation is forced within hours following surgery, before painful muscle spasm and distention have had time to develop. The usual "gas pains" and acutely painful area of incision, apparently due to muscle spasm, never develop or are mild and do not require opiates for relief. By forcing fluids and active ambulation within hours following surgery catheterization has become a thing of the past even following bilateral herniorraphys in young men.

In order to have an alert patient who was willing to cooperate and who was able to void normally, severe restrictions were placed on postoperative opiates, and finally morphine was discontinued entirely and at present demerol is used for analgesia. The usual "P. R. N." order for narcotics had to be discontinued entirely because of its constant abuse by the nursing staffs; at first it was found that the patients were in a virtual stupor and were unable to void or stand alone even twenty-four hours following surgery until it was discovered that there is an almost universal custom among the floor nurses to give a hypodermic at the first sign of returning consciousness following anesthesia. Now a specific order is written specifying the hour when narcotics can be begun and that 100 mgs. of demerol may be given only if absolutely necessary thereafter and at intervals no more often than every six hours. This analgesia was found entirely adequate when it was explained to the patient, the relatives, and the nurses that a certain amount of controlled pain was the best of all stimulants to free movement and the rapid expelling of the poison which we call anesthesia. Coincident with this change in orders another order is written prohibiting pillows under the legs and back as such props prohibit free movement and cause a noticeable loss in the patient's strength and muscle tone.

For reassurance and to force the patient over the first hurdles, the author helps his patients from bed for the first time to prove to the patient and especially to the relatives that there is no danger from the procedure and that much of the pain formerly present will actually disappear after a few minutes of exercise. The patient is warned in advance that he will feel very weak and dizzy for a few moments after arising but that even if he faints (which actually has never happened in the author's series) it cannot hurt him as the surgeon or relatives will support him until he can be put back to bed,

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*Submitted from Hightower-Austin Clinic, Hattiesburg, Miss.

Benzedrine sulfate (5 or 10 mgs.) is routinely used as a stimulant, either intramuscularly or orally, literally to wake the patient up and produce an energetic euphoria which is a great help when the time comes to get the patient out of bed. It is also given by mouth for several days following surgery to increase the patient's desire to get up and take an interest in his surroundings. Of course the drug must be counteracted by a suitable barbiturate if used in the afternoon or else insomnia will result.

Multivitamin injections (Lyo-B-C, S. and D.) have been found very useful before and after general anesthesia. Apparently much of the nausea and vomiting following anesthesia is due to toxic liver damage as it is following acute alcoholic intoxication, and the response to massive vitamin therapy is similar in both cases.

Adhesive binding is solidly applied from the groin to the costal region while the abdomen is still flat; such an extensive dressing being applied to give the patient (and the surgeon) a feeling of confidence and to help in preventing distention. Such a tight girdle dressing is reapplied weekly for a total of three weeks.

In this series of forty-two cases, ranging in age from three years to sixty-seven, there have been no complications or traumatic hernias of any degree. Minor abdominal procedures such as appendectomies, herniorraphys, and suspensions are performed in a day clinic, the patients are ambulatory within four hours and walk down steps and are driven home in the family car (as far as eighty-five miles) before the clinic is closed that evening. A few seconal capsules and demerol tablets are given to the patient to be used if pain becomes severe, and the patient is repeatedly warned that unless he gets up frequently and exercises conscientiously he will be back within four days with severe "gas pains" which will require hospitalization. Surprisingly, over half of these patients have not taken any of "those dope tablets" when they return to have the sutures removed.

Hysterectomies, Caesareans, and the like, are managed similarly except that the patients are kept in a hospital for one or two days following surgery and ambulation.

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JAMES L. HALL, M. D.
Attending Dermatologist, Vicksburg Hospital and Clinic

(Editorial Symposium)

Cancer of the skin is an extremely prevalent lesion particularly in the South. Of 4,922 tissues examined during the past twelve months in the laboratories of pathology of this clinic 87 were found to represent malignancies of the skin. Because these lesions occur predominantly on exposed portions of the body an excellent opportunity is offered for the establishment of an early diagnosis with appropriate treatment—which happy circumstances will generally yield a cure. It is however unfortunately true that all who deal with this disease continue to observe cancer of the skin that has progressed to such an extent that cure is impossible. This regrettable situation perhaps in part is due to the paucity of information or knowledge of the subject that many individuals, even including some physicians, have regarding the potential seriousness of these lesions. All dermatologists encounter patients with far advanced cancers that could in the early stages have been easily enough cured, and would have been cured, except the patients were told that the innocent-appearing little lesion "didn't amount to anything." Others developed lesions that they suspected of being cancer but they are told by neighbors that cancer should be left alone; that if it is treated it will spread or cause other cancers to appear on the skin. This, of course, denotes a lack of the proper concept concerning the nature of skin cancer and it poses an educational problem that all should strive to overcome. The Mississippi Division of the American Cancer Society is performing a very useful function in its educational program. While it is true that this disease causes neither the high morbidity nor the high mortality that cancer of other organs does, it remains nonetheless a serious problem, for the patient with incurable skin cancer is indeed in a pitiable state.

Here as elsewhere the precise cause of the malignancy is unknown. Many investigators in this field have stressed the importance of certain factors that unquestionably do either singly or in combination influence the development of skin cancer. Among the more important should be considered these:

1. **Hereditary Influences.** The person born with a certain type of skin is apt in later life to develop cancer of the skin. The person with a thin, sandy, sometimes ruddy skin that freckles readily and is usually encountered on blondes is such an individual. Many persons are born with a few or many "moles" being present and these occasionally undergo malignant change. In both of the above types of skin there is a strikingly high familial tendency and it is by no means uncommon to observe the same characteristics in three generations of the same family. Those individuals who have more oil and more pigment in the skin possess to that extent a protective mechanism and in these the incidence of skin cancer is lower. It is notably true that the negro for example has relatively few skin cancers.

2. **Environment and Occupation.** There is considerable evidence borne out by surveys that the incidence of cancer of the skin in the South is considerably higher than in comparable areas in the North. This is attributed to the fact that in the main the population of the North is not exposed by occupation or by climate to as many hours of sunshine per year. This brings up the questions of the effect of sunshine (ultra-violet light) on the skin. Ultraviolet light was first suspected of being carcinogenic many years ago; is now definitely known to be carcinogenic. Occupational factors other than sunshine to be considered are exposures to excessive heat, be it a hot, dry wind, a welding torch, or a cigarette, and various chemical substances which may in one fashion or another reach the skin.

3. **Irritation.** Irritation of an area of the skin or of a pre-existing lesion such as a mole seems definitely to influence or perhaps even to precipitate the development of skin malignancy. This is probably what happens when

there is exposure to sunshine, heat or to chemicals. Given sufficient time and repeated insults on a receptive skin eventually certain alterations in the tissue, perhaps cellular changes, take place which do predispose to malignancy.

4. **Age.** This disease is seen usually in those beyond the age of 40. It may appear in younger persons but definitely it is unusual and certainly it is seen with increasing frequency with advancing age.

5. **Sex.** There is a somewhat higher incidence in the male and this is particularly true in cancer of the lower lip, a common enough site in the male, and an exceedingly rare site in the female.

6. **Drugs.** The ingestion or absorption of arsenic is capable of producing arsenical keratoses, and carcinomatous changes occur not uncommonly in these. Arsenic is still being freely prescribed in various forms and farmers are often exposed to it by contact with sprays and dusts.

These are the more important of the predisposed influences in the development of skin cancer but it is hardly logical to assume that any one of these factors would initiate such a lesion. Perhaps in combination they are of great importance.

Here, as elsewhere, successful therapy hinges on early diagnosis and the proper treatment. The small lesion properly treated offers usually a good to excellent prognosis, the prognosis varying according to the location and type of the cancer. Delayed treatment, or improper or inadequate treatment precipitantly reduces the incidence of cure.

One does not need to be especially skilled in the diagnosis of lesions of the skin to be competent to suspect a skin cancer. The general practitioner is in a most favorable position to do this. He knows many of his patients well; others he sees at intervals for years, and properly all come first to him for advice regarding a lesion on the skin.

Cancer of the skin occurs usually on the exposed portions of the body, namely the face, ears, neck, backs of the hands and forearms. The several types resemble one another closely in their inceptions. The lesion may develop in a senile keratosis, which is an erythematous, scaly, at times "warty" lesion, varying in size from that of a pinhead to several centimeters in diameter. The senile keratosis is usually covered with a tenacious, dirty brown scale, removal of which may cause bleeding. This lesion is definitely "pre-cancerous." It is a lesion which very frequently is seen on the so-called "farmer's skin." Many may be present on a single individual and any increase in size should be looked upon with suspicion.

Others appear as small elevated, rounded lesions, firm in consistency, which may be covered with scales or may be perfectly smooth, or even glossy. Still others manifest themselves in pre-existing moles and may be evidenced by increase in size of the mole, scaling or alteration in color consistency. These lesions may develop in old burn scars or in chronic ulcers of various sorts. On the lower lip these are seen arising in an area of "leukoplakia" which is a slightly thickened whitish lesion, or in a scaly, roughened keratotic area.

As the lesion grows older and larger, induration increases and there is a strong tendency to ulceration. There may be little or no pain in the early stages, but when extensive ulceration takes place and particularly if bone or cartilage is involved the pain is apt to be severe and intractable. Some skin cancers remain purely local throughout their existence; others may metastasize at any time.

There are, of course, other neoplasms of the skin, many of them benign, that may resemble cancer in its early stages. There are also lesions of the skin that may produce papular, nodular or ulcerative lesions. It is often impossible to establish a correct diagnosis by clinical observation alone and even those highly experienced in this field cannot be certain of the diagnosis until the pathologist's report is obtained. Biopsy therefore is frequently indicated, and it is particularly essential in determining the type and grade of the cancer for on this determination frequently depends the type of treatment to be employed and the prognosis which may be given.

In the treatment of cancer of the skin it is imperative that the lesion be completely destroyed at the time of the first attack for recurrences are notoriously unsatisfactory to deal with.

Under no circumstances should a lesion suspected of being malignant be temporized with but invariably it should be cared for by one capable of establishing the correct diagnosis and rendering the proper therapy. Any attempt at treatment of the lesion by improper application of acids, caustics, antiseptics, etc., is highly unfortunate for the application of such irritants may greatly accelerate the rate of growth and cause irreparable damage.

Cancer of the skin should be treated by surgical or electro-surgical excision, by radiation or by roentgen therapy. No one method of treatment is suitable for all lesions, and frequently it is prudent to employ several of these methods and combinations to destroy a particular lesion. Generally speaking, the choice of treatment depends upon the location of the tumor, its size and its type.

Current Program in Tuberculosis

Florence R. Sabin, M. D.
Manager of Health and Charity, and David Reisner, M. D., Director
Division of Tuberculosis Control, Department of Health — City and County of Denver, Colo.

The National Tuberculosis Association is the parent organization in which the public as a whole has been invited to take part in the study of a disease. The primary idea for the foundation of the association, at the turn of the century, was education.

The Seal Sale came later and again was pioneer planning on the part of the NTA, for we are just coming to realize that the public to be served is the only source of funds for the promotion of health either through voluntary gifts or through taxes. The Seal Sale has for years supported the work of the NTA and its 3,000 affiliated state and local associations.

Even without knowledge of what factor in the tubercle elicits protective antibodies and so builds up resistance, the death rate in this disease, as is now well known, has been shifted from first to seventh place.

What are the important basic facts responsible for this shift? First was the discovery of the tubercle bacillus as the inciting agent of tuberculosis; second, the discovery of how it leaves the body in the sputum, and third, its means of transmission to another individual. Thus, the remarkable results to date have come from blocking the transmission of this disease.

Why is the quest of an immunizing agent so difficult in the case of tuberculosis? Literally thousands of physicians have worked on this problem since Koch first discovered the tubercle bacillus, now nearly seventy years ago. All we can say at present is that we do now know the reason for some of the difficulties. There is marked variability in the bacillus. There are extreme variations in the susceptibility and resistance of the body to this infection. Indeed, different organs of the body vary so much in resistance that the disease may be regressing in one organ while advancing in another. Then the bacillus is remarkably well protected by its own structure, and moreover, may continue to live and multiply inside certain cells of the body instead of being killed when engulfed.

Coincident with studies along the lines of basic research, many of them sponsored by the NTA, there have been such advances along clinical lines that we are now in position to take the next great step toward a significant reduction in the death rate of this disease which, in spite of a marked general reduction, still holds first place among diseases as a killer in its most susceptible age group — the young adult.

Beside this susceptibility of the young adult, another interesting observation of recent years is the fact that the tuberculosis mortality in the United States has shown a decided shift in the direction of the older age groups. This is especially true for the white male population in which the peak of tuberculosis mortality is observed in persons past the age of 60. The indications are that death from tuberculosis in the elderly age groups is usually preceded by prolonged periods of illness and resulting disability.

In considering the next steps in eradicating tuberculosis, the advances in chest surgery in all its aspects, the use of new and promising drugs, the mass surveys with x-rays of the chest for finding early cases, the excellent results of treating the early cases so found, the use of vaccination with BCG for specific groups which have especial occupational exposure, such as nurses and medical students, together with the time-tested method of isolating open cases in sanatoriums and so blocking the transmission of the disease — all bring new hope of a further reduction in the incidence of tuberculosis.

Still another factor that brings hope to the problem of checking tuberculosis comes from the increasing interest in this disease in departments of public health. Private agencies are the pioneers in the control of diseases that need a great deal of cooperation from the public. When governmental agencies enter into the work, they bring a certain type of precision to the problem. The United States Public Health Service, as well as state and local health services that have long been completely organized, have already been making a great contribution, and the proposed extension of local health services to the entire nation will greatly spread this work.

It is clear that adequate hospital beds for the known open cases of tuberculosis are a link in this chain. When legislators understand the need, the public must be ready to back the appropriation of necessary funds through taxation. So important is this contribution which the city and state governments can make to this problem, that we would advise people to find out how active and how effective is the program of their local government for the further eradication of tuberculosis.

The National Planning Association, with headquarters in Washington, D. C., has made studies of great importance concerning the present cost of caring for tuberculosis and the economic loss in production which the disease brings about as compared with the cost and effectiveness of a short-time intensive program with known methods for cutting the incidence of this costly disease. Their studies should be given wide publicity.

In general, their figures — which are only estimates— show that a possible expenditure of $321,000,000 a year for a few years might reduce the cost of a maintenance program to about $37,000,000 for the nation, whereas we now spend $174,000,000 in the case of the tuberculosis patients. There is an estimated loss in wages for one year of $181,000,000 and a loss of $348,000,000 worth of goods a year, based on 1943 prices, which these patients might have produced. Note that this last figure of materials that could be saved is more than the estimated cost of reducing this disease.

Perhaps it is time to shift the emphasis to the economic losses of tuberculosis and the economic gain from its eradication. Each of us can help in the campaign to eradicate tuberculosis by supporting the Christmas Seal Sale.

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TUBERCULOSIS

The Management of the Heart in Pulmonary Tuberculosis*

EDWARD PODOLSKY, M. D.
Brooklyn, N. Y.

THE HEART undergoes certain changes in pulmonary tuberculosis which must be taken cognizance of in the proper management of the disease. Mainly these changes are in the nature of displacements, and these are of two kinds. First there are those which are due to a retractive process in the lung which causes the heart to be pulled over to the diseased side. The second type of displacement is in the nature of compression or pushing over by a pleural effusion or by pneumothorax.

In the matter of retractive displacements of the heart there are now recognized five main etiological factors, one or more or all of which may act in any given case. These are: 1) unilateral disease, 2) fibrosis, 3) pleurisy, 4) cavitation, 5) complemental emphysema on the opposite side.

Unilateral disease is of great importance. It seems that complete displacement of the heart is never found in bilateral pulmonary tuberculosis.

Fibrosis. Here the factor of unilaterality is also important. Bilateral fibrosis may tend to neutralize the opposing forces and cause very slight displacement of the heart. When there is an appreciable lesion in one lung with marked fibrosis there will always be a tendency for the heart to be pulled over to the diseased side.

Pleurisy acts in two ways. First, because of localized pleuropericardial adhesions it generally exerts a tug on the heart. Second, a more generalized pleurisy has an even more pronounced effect. It is well known that pleurisy, specially with effusion, is often followed by sclerosis. This quite frequently results in displacements sometimes so marked as to cause complete dexiocardia or sinistracardia.

Cavities. It is very easy to understand that where cicatricial contraction is going on around a cavity there is a tendency for the heart to move over as the cavity becomes reduced in size. The larger the cavity, the greater becomes the exertion of the heart, until we find, in some far advanced cases a complete sinistrocardia and such marked excavation of the left lung that the walls of the cavity are only half an inch thick. Bronchiectasis may bring about similar displacements.

Complemental Emphysema. Formerly it was thought that complemental emphysema was of great importance as an etiological factor. Lately it has been felt that it is only of secondary importance.

Prognosis

As regards the tuberculosis process itself, displacement of the heart is in most instances an indication that fibrosis is taking place, and is therefore a good sign. Pollissier found that the prognosis in cases caused by cavitation is worse than those caused by pure fibrosis.

What are the effects of displacements upon the heart itself? If the displacement is slight the effect on the heart is negligible, but if allowed to become pronounced, the heart is often drawn farther over to the diseased side and its activities seriously interfered with.

Treatment

Treatment must fulfill three conditions: First, the heart should be replaced as much to the normal position as possible. Second, the replacement should be permanent. Third, it must be accomplished in a manner which is not harmful to the already diseased lung.

Gunther has for many years corrected displacement by phrenicectomy. Theoretically, it is argued that a successful hemidiaphragmatic paralysis, with a consequent rise of the diaphragm, will by partial collapse of the lung restore the heart to its normal position. Gunther has noticed that the heart has moved back to normal by as much as 1.5 cm. in five weeks.

In some cases it is not necessary to resort to phrenicectomy. A simpler method is by breathing exercises. If every available part of the remaining lung tissue is brought into action by carefully planned and conducted exercises in breathing, the diseased lung will expand and the heart will gradually be pushed back into normal position.

Phrenic evulsion is perhaps the best method for replacing the heart pulled over by the diseased lung. Breathing exercises are indicated in milder cases. Should phrenicectomy fail through the diaphragm not rising, breathing exercises are of no value and are in fact contraindicated, for expansion of the healthy lung is encouraged, and the displacement is likely to be made worse instead of better. Rather should the operative procedure follow the breathing exercise if the latter fail. Where, however, the displacement is associated with bronchiectasis, phrenic evulsion is probably the only method likely to become successful.

Some clinicians have found that breathing exercises may also be useful as a means of preventing the displacement of the heart. Burnand, King and Hansen have reported some good results along these directions. These exercises should begin as early as possible.

More serious than cardiac displacements in tuberculosis is the extension of the tuberculous process to the heart itself. This is not very common, fortunately, for once the heart has become the seat of the disease very little in the way of relief can be accomplished.

Tuberculosis of the myocardium was first described in 1832 by Townsend. Haberling in 1856 was able to collect twelve cases and Valentine in 1895 in his monograph on the subject was able to find only thirty-six cases. Carson, Oudenda, Gallauradin and Stefko added cases, and at the present time the total is ninety-four cases.

Tuberculosis of the myocardium is of three types:

Tubercles, single or more, in size from a pea to a goose egg, may project beneath the endocardium or pericardium or be buried in the myocardium. They are firm, whitish masses with caseous centers.

The miliary type consists of grayish, semitransparent masses which project as slight elevations beneath the endocardium. There are found to the greatest extent on he ventricular wall.

The third is the diffuse form which consists of a general tuberculosis of the pericardium.

Tuberculosis of the myocardium most often occurs in the right ventricle. The right auricle is next most frequently involved. The large tubercles occur most frequently and the miliary variety is second in frequency.

There is no specific treatment for tuberculous involvement of the heart. If signs of failure intervene digitalization may be resorted to with some relief. If the involvement of the heart is slight the prognosis is generally good. In miliary tuberculosis the prognosis is always unfavorable.

VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held in Madison, Wisconsin, May 26, 27, and 28, 1948, providing essays of sufficient merit are presented in competition.

Send a typewritten double spaced copy to the corresponding secretary, Dr. T. C. Davison. 207 Doctors Building, Atlanta 3, Georgia, not later than March 15, 1949.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

The Southern Medical Association will hold its next annual session in Cincinnati, November 14-17, as the guest of the Campbell-Kenton County Medical Society of northern Kentucky.

Please note the program for the Mid-South Postgraduate Medical Assembly which meets at the Peabody Hotel in February.

We should look forward to the Mississippi State Medical Association next May at the Buena Vista Hotel in Biloxi and make it one of the very best meetings we have ever had. Every doctor should do his best to attend the state meeting. It not only has good scientific papers, but it is the place for problems of organized medicine to be studied and discussed. Dr. R. B. Caldwell of Baldwyn is the president of our state association with Dr. B. B. O'Mara as president-elect. The Gulf Coast is a delightful place to meet. We will have fine accommodations at the Buena Vista Hotel. We are sure that our program committee is putting forth every effort to give us a good scientific program. We understand also that we will again have our public night which was instituted about seven or eight years ago while we were meeting on the Coast. We are looking forward to having Dr. Fishbein, a most informative and a most entertaining speaker on this program. The public night at our state meeting should be made very valuable in bringing about a better understanding between the laity and the medical profession. This is of great importance at this time.

The unexpected has happened; it may happen again. After the great victory of President Truman we might not still have regimentation in medicine. We acknowledge that it is good human economy for every person in the United States to have the best there is in medicine. This should be not only the goal of the medical profession but every member of the profession should feel this responsibility and make the effort to bring this about with all the heart, mind, and strength at his command. Judging the future by the past it is very certain that socialized medicine is not best for the people. Under the banner of socialized medicine the efficiency level of service to the people has dropped. Our nation is now the mecca of medical education and the leader for the best medical service to the people. Free medicine thinks farther and broader and deeper than the political salaried type. We should be very proud of the achievement of the medical profession in our nation. We are not in the lead, but this does not mean that we are doing our best. It does not mean that all the people are receiving the best there is in medicine. Some think that when we have more hospitals all will be well. It will no doubt be better, but hospitals are not supposed to practice medicine, nor should they exist to make money on sick people. There is a shortage of doctors and nurses and there will be for some time. Medical service is only as good as the doctors behind it, augmented, of course, by the hospital which becomes a very great means in carrying more and better medicine to the people. The spirit of medicine has grown cold, and does not flow freely to all the people in need. It is not meeting the challenge as well as it could, and we would be better off to admit this truth, try to inspire the young graduates with greater ambition to serve even if it means getting out in the rural communities.

The small town and rural community constitute the replacement arsenal for our human assets. We need specialists, but it is doubtful if we have reached the time when all doctors should be specialists. We need a few more medical schools and of a different type. We need men with vision and purpose at this time who can bring about a better understanding between the people and the medical profession. In turn, we need a people who are a bit more patient and a bit more appreciative. Nor can the profession keep medicine in liquid form when it is full of chunks of selfishness and greed for money. The medical profession of our country is too noble and too great for it to be any part of the cause of regimentation in medicine. The great and free thinking people of our nation must not have this shackle forged upon them. But we can not attain the goal of the best in medicine to all the people until more young men beginning in medicine are willing to go out to the civil firing lines where money may not be quite as plentiful, where the task is not quite as easy, but where the rewards in service rendered are far greater than in the elite urban centers. Rural areas must also have more and better hospitals, some grants for the poor class, and a more liberal public health program. We can then build great total health assets, a stronger and a happier people more resistant to disease and mightier in their love of peace and progress.

One of the tallest trees in the forest has fallen. Dr. W. A. Evans is dead. He died about eleven o'clock November 8 of a coronary attack. He was a tireless worker and had been for most of his 83 years of life. He drove himself mercilessly. He actually died of overwork. He entered the study of medicine early in life and for a few years after graduation and registration he was engaged in the general practice of medicine in Aberdeen along with his father. But before he had reached the age of thirty years he had established himself high in the ranks of teachers of medicine in Chicago. He taught in different schools in Chicago giving special care to the teaching of pathology and public health. He was for a number of years health commissioner for the city of Chicago. Among his best friends and principal associates was Dr. J. B. Murphy. It may not be said of any man that he is superior to all others as a practitioner of surgery or medicine, but Dr. Murphy, certainly, had no superior as a **teacher** of medicine and surgery. And to be recognized as a superior teacher, as Dr. Evans was, by such a man as Dr. Murphy was a wonderful compliment and endorsement. Dr. Evans was possessed of giant intellect, tireless energy and was a close and compassionate friend. I admired him for his intellect and loved him as a friend. Dr. Evans was a man of letters in a comprehensive way. He was an extensive author of books and magazine articles with a strong tendency to history. But he indulged in sentiment and friendship. He was a veritable cyclopedia of facts and information. Mississippi has produced few if any men of wider knowledge or greater ability than Dr. Evans. He will be greatly missed as scholar, citizen and friend.

(Dr.) G. S. Bryan

News and Comment

The Southeastern Region of the College of American Pathologists will meet in Charlotte, North Carolina, on December 10 and 11.

Dr. Tracy Mallory, pathologist, Massachusetts General Hospital; Dr. Robert Heinle, Associate Professor of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio; Dr. N. Chandler Foot, Professor Emeritus of Surgical Pathology, Cornell University; J. A. Cunningham, M.D., and L. C. Posey, M.D., Birmingham, Alabama; E. R. Pund, M.D., University of Georgia School of Medicine, Augusta, Georgia, are chief essayists on the program.

Tulane University of Louisiana Division of Graduate Medicine offers a postgraduate review in neoplastic diseases, sponsored by Orleans Parish Unit and Louisiana State divisions of the American Cancer Society, November 15-17, New Orleans, Louisiana.

The purpose of this course is to summarize aspects of neoplastic diseases of practical importance to general surgeons and practitioners of medicine. The subject matter has been selected in such a way as to provide thorough discussion of established principles, recent contributions, and controversial subjects of practical importance.

ANNOUNCEMENT

John D. Coffey, Jr., M. D., announces the opening of his offices at 502 Oak Street, Natchez, Mississippi. Practice limited to pediatrics.

DEATHS

DR. W. A. EVANS

Dr. William Augustus Evans, internationally known physician, health authority, author and newspaper columnist, died of a heart attack Monday morning, November 8.

Death came at 11 a. m. at the home of W. A. Evans, a nephew, at Sunnyside Plantation, ten miles west of Aberdeen.

Dr. Evans was born in Marion, Alabama, just after the end of the Civil War. He was the oldest of seven children.

He was graduated from the Aberdeen High School and enrolled at the old Mississippi A. and M. College at Starkville, now Mississippi State College.

He was a member of the first graduating class of A. and M. College. There were only five members of this class and all attained prominence. They were Buz M. Walker, former president of Mississippi A. and M. College; Blewett H. Lee, former general counsel of the Illinois Central Railroad, Chicago; R. N. Beatty, attorney of Memphis, and H. H. Harrington, former president of Texas A. and M. College.

After leaving A. and M. College, Dr. Evans studied medicine at Tulane University, receiving his degree in 1885. He came back to Aberdeen and began his practice of medicine. He was vice-president of the Mississippi State Medical Society in 1889.

His first public health work was in connection with a yellow fever epidemic in 1888.

In 1891 Dr. Evans went to Chicago from Aberdeen to become professor of pathology in the Medical Department of the University of Illinois. He remained in this position until 1908, when he became professor of public health at Northwestern University. He remained there until he became professor emeritus in 1928.

Dr. Evans was president of the Chicago Medical Society in 1903. Four years later he became health commissioner of the city of Chicago and worked out a number of health reforms, such as a better milk supply, more sanitary conditions, better water supply and the famous Chicago drainage canal. He served in this capacity for more than twenty years.

Dr. Evans became health editor of the Chicago Tribune in 1911. His "How to Keep Well" column was syndicated and used by hundreds of daily newspapers in the United States and foreign lands. He remained with the *Tribune* until he retired on a pension in 1934 and returned to Aberdeen.

He was president of the American Public Health Association in 1916.

Along with professional honors, Dr. Evans had achieved distinction in other lines. As a young man, he was captain of the old "Aberdeen Guards," similar to the present National Guard organization. He won a silver cup in a competitive drill at Greenville, Mississippi, in 1885, for the "best drilled soldier in the state." Later, he was a major in the First Illinois Cavalry.

Dr. Evans was the author of a number of books, both professional and historical, including "Notes on Pathology," "Life of Mrs. Abraham Lincoln," "Yearbook of Pathology," "Yearbook of Public Health."

He was a retired honorary member of the Illinois Medical Society (50 years' practice in medicine). He was also a retired honorary life member of the Chicago Rotary Club.

Dr. Evans also made various contributions to medical literature which have appeared in national and state medical journals. He was co-author with Mrs. J. O. Wynn in publication of "Travel Diary of W. N. Wyatt."

Dr. Evans married Miss Ida May Smith of Bolivar, Tennessee, in 1907. She died in 1926. They had no children.

He leaves a sister, Mrs. J. O. Wynn of Atlanta, and a brother, Herbert H. Evans of Charlottesville, Va.

Services were held Wednesday afternoon at the First Baptist Church with the Rev. C. W. Thompson officiating. Burial was in Odd Fellows Rest.

Pallbearers were Julian Evans, Jr., Billy Johnson, Isham Evans, Jim Evans, John Therrell, Jr., Will Evans, Ike Franklin, and Richard Heard.

Honorary pallbearers were Dr. N. S. Dixon, Dr. John Lilly, Dr. Frank Kennedy, Dr. J. W. Jackson, Dr. J. M. Acker, Dr. R. T. Dabbs, Dr. C. C. Brummett and Dr. C. H. Lovee of Aberdeen, Dr. J. E. Ellis of West Point, Dr. G. S. Bryan of Amory, Dr. W. H. Anderson of Booneville, Dr. Felix Underwood of Jackson, Dr. Seale Harris of Birmingham, R. W. Griffin, Charles Peugh, Bill Stockton, H. B. Sanders, Henry Dugan, C. T. Napier, Roger Sanders, Walter Darracott and Frank Crawford of Aberdeen.

DR. D. G. BARDWELL

Services were held for Dr. David G. Bardwell, prominent Charleston physician, who died suddenly of a heart ailment August 10.

Though born and reared in Texas, Dr. Bardwell was educated at the University of Tennessee where he received his M. D. degree. He has practiced medicine in Charleston since 1909 and has served his community without any thought of his personal health, even after he became ill about a year ago.

He leaves his wife, Mrs. Morris Neely Bardwell, two daughters, Mrs. W. H. Stevenson of Ashland, Kansas, and Mrs. Frank Sayle of Charleston and three grandchildren, David and Sally Sayle and Gene Stevenson.

DR. L. F. FERGUSON

Dr. Leon Festus Ferguson, 73-year-old physician of Greenwood, passed away at the Greenwood Leflore Hospital October 7. He had been ill for several months.

Funeral services were held at the First Baptist Church the following morning.

Dr. Ferguson received his medical education at the University of Louisville, Louisville, Ky.

Dr. Ferguson had practiced medicine in Greenwood for the past 29 years. He was prominent in civic and religious activities, serving as deacon of the First Baptist Church and active in work of the Sunday school. He was a Mason and took an active part in local lodge work. Dr. Ferguson was the son of the late Benjamin Warren Ferguson and Florence Kelly Ferguson.

Surviving are his widow, Mrs. Mary Hewlett Ferguson and a foster son, Rev. Edwin Hewlett, pastor of Southwest Baptist Church, St. Louis, Mo. He is also survived by three brothers and a sister: Dr. A. C. Ferguson, M. C. Ferguson, both of Walnut Grove; A. E. Ferguson, Vardaman, and Miss Lois Ferguson, Sheridan, Ark.

Interpreting Medical Literature

STAFF OF REVIEW

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THUMB AND FINGER SUCKING IN CHILDREN — York, N. Y. Journal of Pediatrics 32:99-101, January, 1948.

"Thumb and finger-sucking is a common and, generally speaking, innocuous habit of infants and children. Occasionally the thumb is temporarily deformed and infected and the teeth may be displaced. The configuration of the palate is not affected. Teeth displaced by finger-sucking usually return to their original position when the habit ceases; or may be replaced by simple dental appliances. Correction of malocclusion due to finger-sucking is readily accomplished since the task is one of pushing the teeth back to their normal position in relation to the palate. Since the habit usually disappears before the sixth year the permanent teeth are only occasionally displaced. Studies of the growth of the mouth structures indicate that heredity is by far the most important factor determining dental alignment.

"Clinical experience indicates that the hypothesis of David Levy that finger-sucking expresses inadequate sucking activity is only of minor importance. Throughout life the mouth is used for pleasurable satisfaction. Thumb-sucking during infancy is a habit like that of gum-chewing and nail biting in childhood or smoking and munching in adulthood.

"Thumb-sucking may cease toward the end of the first year, especially when associated with feeding, but it often persists. According to Gesell and Ilg it is most common between 18 and 21 months of age. Some children will sit for hours with a thumb in the mouth, either alone or watching other children at play, but not taking part in their activities. Many children suck the thumb only when falling asleep and during sleep.

"The parents should be reassured as to the harmlessness of thumb-sucking with respect to alignment of the permanent dentition. Mechanical restraints and bitter substances are generally useless and may be harmful since they tend to rouse the child's negativism and to foster resentment. Shaming may shake the child's faith in himself and make him unsure of parental affection.

"No treatment is required when the habit is practiced only in relation to sleep. The handling of the baby should be reviewed with the mother to see that there are no gross errors in child rearing. If the parents are much concerned a rubber pacifier may be offered. After the first year of life thumb-sucking during the waking hours means usually that the child is over fatigued, bored or unhappy. Treatment should be directed toward correcting the total situation. The child should have adequate rest and ample play outlets, and an attempt should be made to correct undesirable parental attitudes.

"By 5 or 6 years of age the large majority of children are ready to drop the habit. Promise of a reward, an appeal to the child's will-power or vanity, having the child himself apply a bitter-tasting substance to the thumb, or the wearing of gloves are often successful."

COMMENT: This is a subject that has worried many doctors. I feel that the approach of the writer of this paper on this subject is very appropriate.

VA CLINICAL PATHOLOGY

Case from Army Hospital San Juan, Puerto Rico

CLINICAL HISTORY

Patient: J. D. C., male, age 24 years.

Chief Complaint: Abdominal discomfort.

Present Illness: Patient complained of occasional abdominal discomfort together with weakness, shortness of breath and fatigue on slight exertion.

Physical Examination: Revealed no remarkable findings. The spleen was not palpated.

Laboratory Findings: Hemoglobin 60 per cent, red blood count, 4,400,000; white blood count, 9,250. Feces showed ova of Necator americanus. Urine normal. Colon negative.

Progress: During the hospital stay the patient was given anthelmintic, ferrous sulphate and parenteral liver and was discharged with the diagnosis of simple anemia and Necator americanus.

Second Admission: Patient was readmitted three weeks later with history of diarrhoea, abdominal pain and dizzy spells. On physical examination no splenomegaly was noted. Blood pressure: 98/60. Laboratory findings at this time showed hemoglobin to be 80 per cent and the stool examination revealed the presence of Necator americanus and Trichiuris trichiura. He was discharged in ten days with a final diagnosis of gastroenteritis and ankylostomiasis.

Third Admission: Ten days after second admission patient was readmitted with a diagnosis of acute cystitis and at this time the patient was noticed to be jaundiced. He also had nasopharyngitis but was discharged in one week with relief of symptoms.

Interval History: The next information available concerning this patient was three months after the last admission when he was on furlough and had no complaints. The day before his death he complained of abdominal pain and the following day died suddenly after two convulsions. There was no history or evidence of poisoning, injury, or ingestion of intoxicating liquors.

State Board of Health

Felix J. Underwood, M. D.

PUBLIC HEALTH PROGRESS IN MISSISSIPPI AS REVEALED BY MORTALITY RATES

Some Vital Statistics for September

Dr. R. N. Whitfield, director of Vital Statistics, has released the following statement, based upon reports from registrars of births and deaths throughout the state for the month of September:

The high birth rate which prevailed all over the nation last year seems to be still in effect in Mississippi. There were more than four times as many births in the state last month as deaths. Forty-six per cent of the births occurred in hospitals.

The registrars reported a total of 90 deaths without medical attention during september. They have been instructed not to count sudden deaths when making up this item of vital statistics in their counties.

There were 379 deaths from heart disease during the month of September; 141 deaths from cancer; 61 pneumonia deaths; 42 tuberculosis deaths; 140 deaths from apoplexy; and 85 deaths from nephritis.

Also, 7 suicides were listed; 15 homicides; and 83 deaths from accidents of all kinds.

o

Communicable Disease Reporting

The public would like to be kept constantly informed as to the prevalence of communicable diseases. This knowledge could be a forceful tool in causing the average citizen to suspect these illnesses early and to call on his physician for therapeutic and protective measures, thereby bringing about more effective control.

Have you, as a private physician, contributed to the completeness of morbidity reporting? No other group can make this information available to the public except the medical profession through official reports to the county health officers and the State Board of Health.

Physician responsibility and authority for morbidity reporting are included in the following abstract from **Rules and Regulations of the Mississippi State Board of Health Governing Reportable Diseases:**

MISSISSIPPI STATE BOARD OF HEALTH

DEATHS FROM SELECTED CAUSES WITH RATES* - 1913-1946

Year	Typhoid Fever No.	Typhoid Fever Rate	Malaria No.	Malaria Rate	Pellagra No.	Pellagra Rate	Scarlet Fever No.	Scarlet Fever Rate	Diphtheria No.	Diphtheria Rate	Smallpox No.	Smallpox Rate	Tuberculosis No.	Tuberculosis Rate	Whooping Cough No.	Whooping Cough Rate	Measles No.	Measles Rate	Diarrhea (-2 yrs.) No.	Diarrhea (-2 yrs.) Rate
1913	659	35.0	1264	67.1	795	42.4	6	0.3	158	8.4	2	0.1	2565	136.7	330	17.6	46	2.5	678	36.1
1914	625	32.9	1030	54.2	1192	62.7	4	0.2	193	10.2	8	0.4	2490	131.0	252	13.3	329	17.3	647	34.0
1915	620	32.2	1492	77.4	1535	79.6	2	0.1	152	7.9	9	0.4	2706	140.4	173	8.9	30	1.6	537	27.9
1916	668	34.2	1426	73.1	840	42.9	13	0.7	141	7.2	10	0.5	2625	134.5	171	8.8	13	0.7	621	31.8
1917	554	28.0	979	50.5	1086	54.9	9	0.5	157	7.9	3	0.2	2743	138.7	288	14.6	546	27.6	786	39.7
1918	599	29.9	791	39.5	746	37.3	7	0.3	137	6.8	16	0.8	2793	139.3	453	22.6	732	35.6	813	40.6
1919	364	20.3	653	36.5	495	27.6	13	0.7	131	7.3	8	0.4	2436	136.1	156	8.7	42	2.3	513	28.9
1920	342	19.1	722	40.3	554	30.9	20	1.1	282	15.7	44	2.5	2271	126.8	153	8.5	18	1.0	629	35.1
1921	348	19.4	963	53.3	634	33.2	12	0.7	364	20.3	15	0.8	1956	109.2	229	12.3	29	1.6	612	34.2
1922	337	18.8	720	40.2	448	25.0	7	0.4	296	16.5	6	0.3	1879	105.0	181	10.1	6	0.3	503	28.1
1923	252	14.1	581	32.4	413	23.1	8	0.4	173	9.7	4	0.2	1743	97.6	252	14.1	233	13.0	522	29.2
1924	330	18.4	365	20.4	413	23.1	10	0.6	89	5.0	6	0.3	1840	102.7	205	11.4	211	11.8	545	30.4
1925	470	26.2	411	23.0	561	31.3	10	0.6	130	7.3	4	0.2	1855	103.6	127	7.1	21	1.2	586	32.7
1926	390	21.8	409	22.8	564	31.5	5	0.3	122	6.8	4	0.2	1862	104.0	251	14.0	61	3.4	491	27.4
1927	255	14.2	427	23.8	689	38.5	16	0.9	177	9.9	4	0.2	1772	99.0	276	15.4	163	9.1	568	31.7
1928	237	13.0	521	29.0	747	41.7	15	0.8	158	8.8	1	0.1	1797	100.4	195	10.9	298	16.6	565	31.6
1929	197	9.9	355	17.9	727	36.6	8	0.4	162	8.1	0	-	1649	83.6	203	10.2	95	4.8	466	23.4
1930	238	11.8	281	14.0	573	28.5	16	0.8	156	7.8	2	0.1	1750	87.0	160	8.0	30	1.5	476	23.7
1931	211	10.4	211	10.4	541	26.6	11	0.5	225	11.1	2	0.1	1588	78.1	71	3.5	9	0.4	326	16.0
1932	145	7.1	341	16.6	308	15.0	12	0.6	138	6.7	5	0.2	1396	68.0	110	5.4	3	0.1	241	11.7
1933	135	6.5	695	33.6	267	12.9	9	0.4	116	5.6	0	-	1314	63.6	244	11.8	65	3.1	325	15.7
1934	66	3.2	647	31.0	211	10.1	15	0.7	98	4.7	0	-	1199	57.5	318	15.3	318	15.3	430	20.6
1935	61	2.9	521	24.8	222	10.6	11	0.5	93	4.4	1	0.0	1135	54.0	112	5.3	22	1.0	232	11.0
1936	95	4.5	352	16.6	264	12.5	5	0.2	73	3.4	0	-	1258	59.4	55	2.6	26	1.2	414	19.5
1937	77	3.6	301	14.1	236	11.0	3	0.1	52	2.4	1	0.0	1300	60.9	114	5.3	60	2.8	416	19.5
1938	65	3.0	268	12.4	266	12.4	7	0.3	79	3.7	0	-	1164	54.0	150	7.0	78	3.6	344	16.0
1939	48	2.2	221	10.2	199	9.2	1	0.0	57	2.6	0	-	1097	50.5	158	7.3	84	3.9	302	13.9
1940	31	1.4	168	7.7	162	7.4	2	0.1	61	2.8	0	-	1057	48.3	144	6.6	12	0.5	300	13.7
1941	36	1.6	146	6.7	121	5.6	5	0.2	40	1.8	0	-	1016	46.7	138	6.3	66	3.0	276	12.7
1942	22	1.0	84	4.0	115	5.4	5	0.2	44	2.1	0	-	1092	51.6	102	4.8	56	2.6	235	11.1
1943	21	1.0	74	3.6	84	4.1	6	0.3	24	1.2	1	0.0	887	43.2	90	4.4	19	0.9	206	10.0
1944	15	0.7	61	3.1	67	3.4	4	0.2	34	1.7	2	0.1	813	40.7	96	4.8	29	1.4	207	10.4
1945	21	1.1	39	2.0	53	2.7	3	0.2	41	2.1	1	0.0	687	34.5	45	2.3	28	1.4	152	7.6
1946	9	0.4	29	1.3	46	2.0	3	0.1	31	1.4	0	-	694	30.2	33	1.4	42	1.8	45	2.0

* Deaths per 100,000 population

"It shall be and is hereby the duty of each practicing physician, superintendent in charge of any hospital or institution, and teachers in schools to report to the County Health Officer in the county in which he resides any case or suspected case of communicable or reportable disease which he is attending, has examined or has knowledge of, and such report shall be made within 24 hours after the first knowledge thereof. Such report may be written or telephonic and shall state the name, usual residence, age, sex, color, the disease or suspected disease, and the date of onset of the disease."

The Legal report forms are available through each county health officer.

Hospitals and the medical profession must work hand in hand if the people are to be served as they should be.

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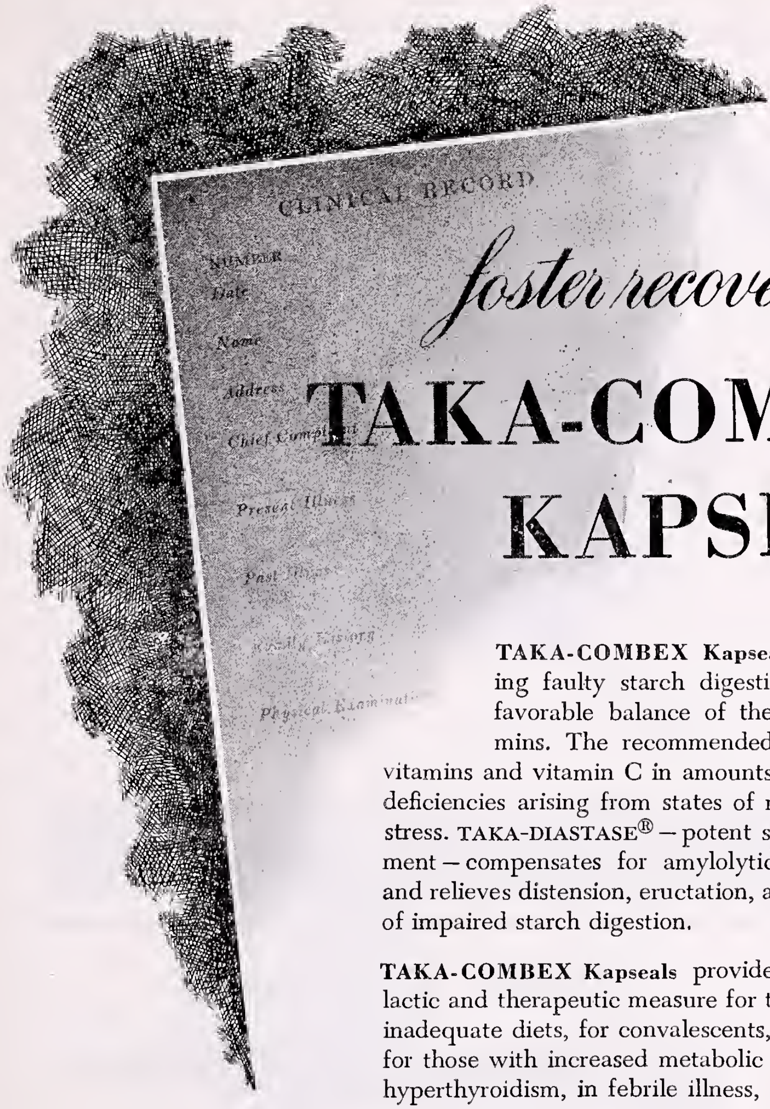

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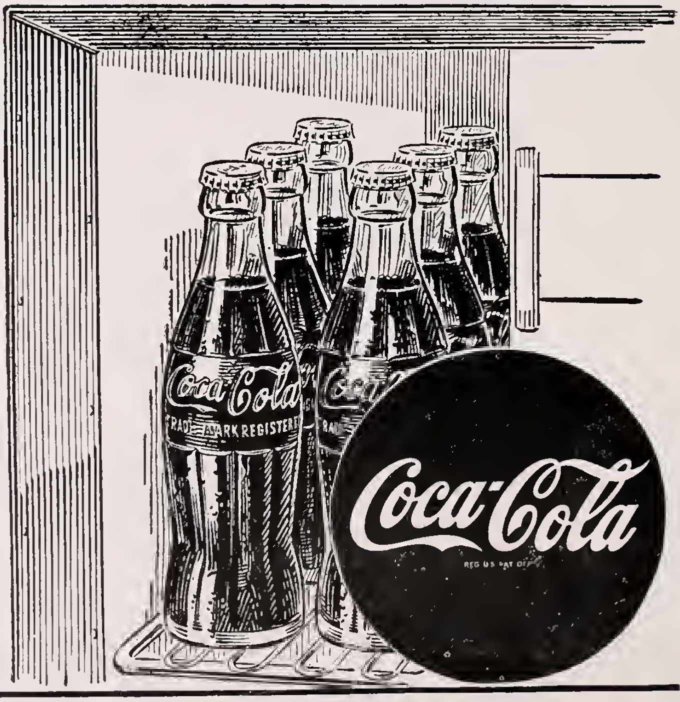
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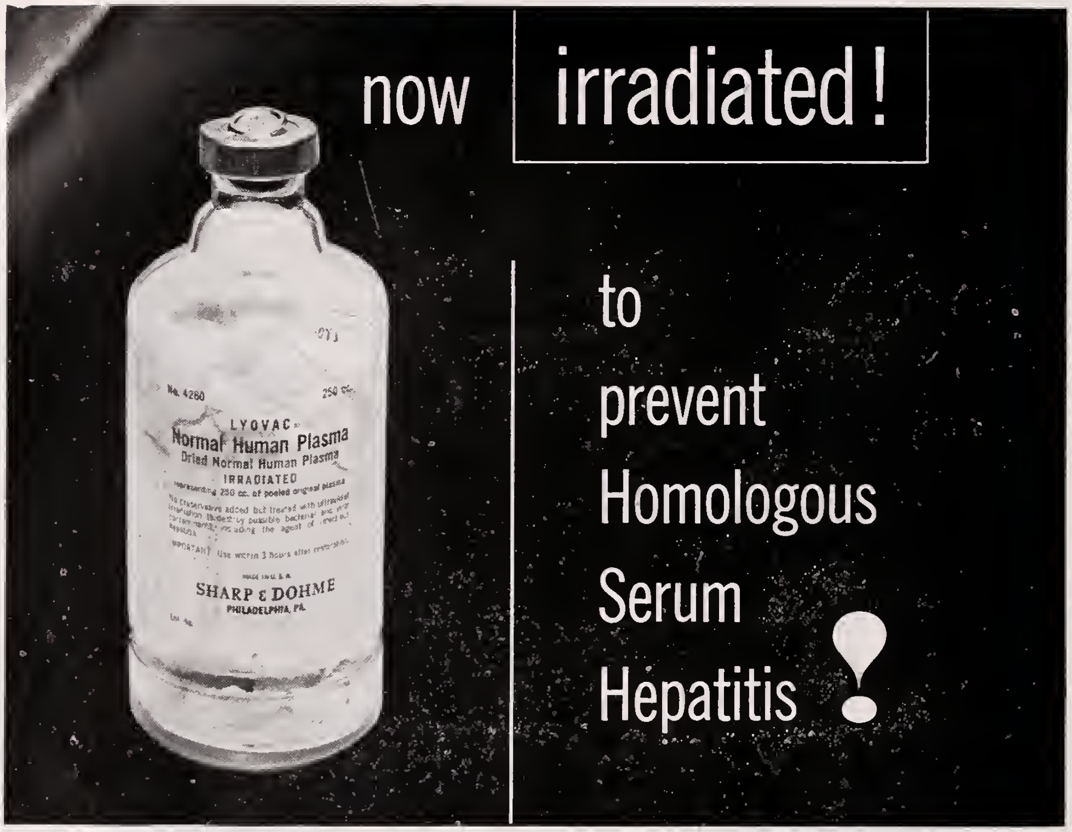
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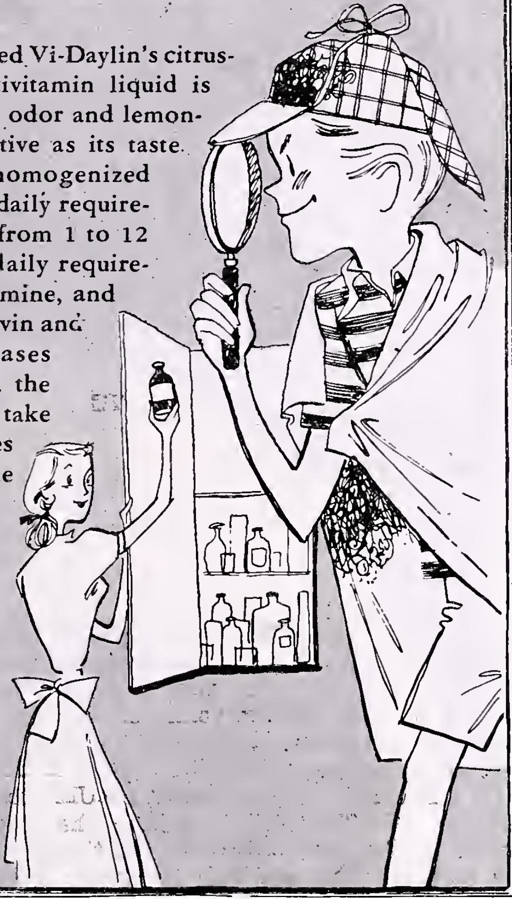

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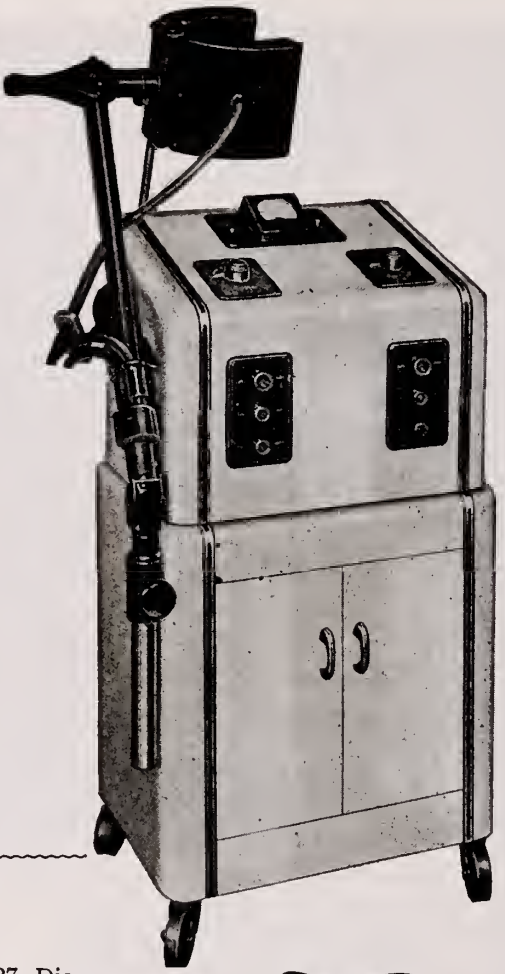

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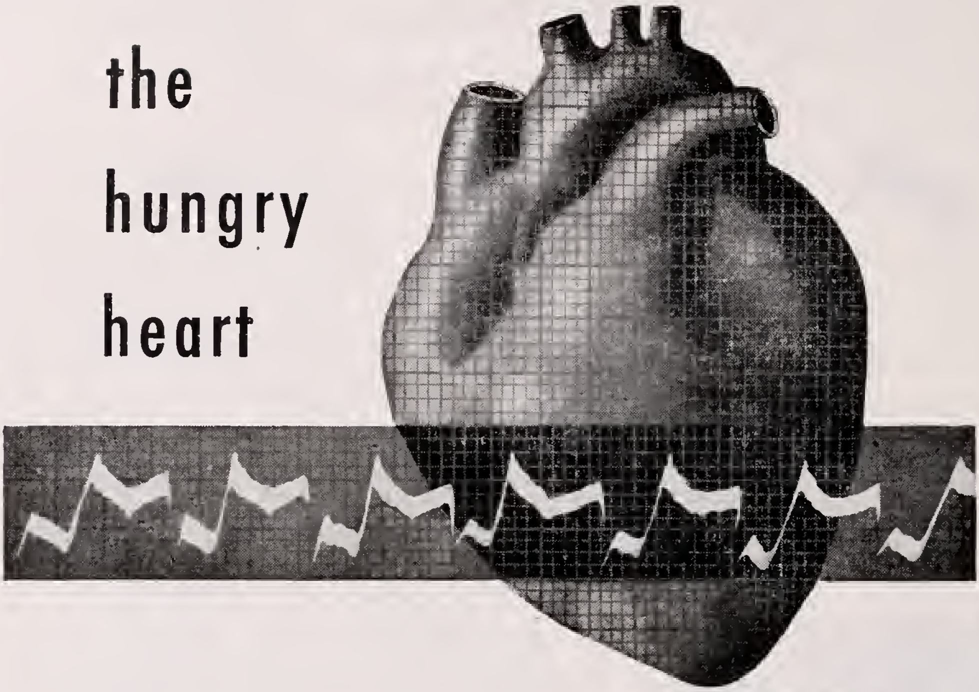

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1. Ayman, David, and Goldshine, Archie D.: *Arch. Int. Med.*, 63:899, May, 1939.
2. Feldt, Robert P and Wenstrand, D. E. W.: *Arch. Int. Med.*, 67:1157, June, 1941.

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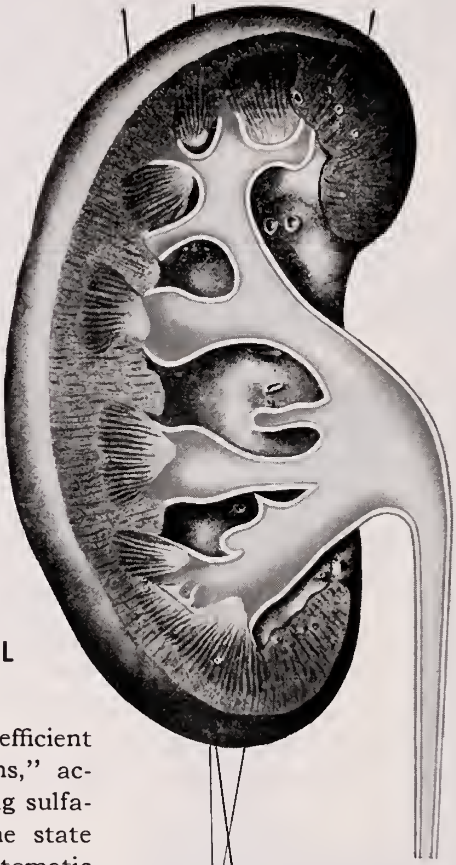

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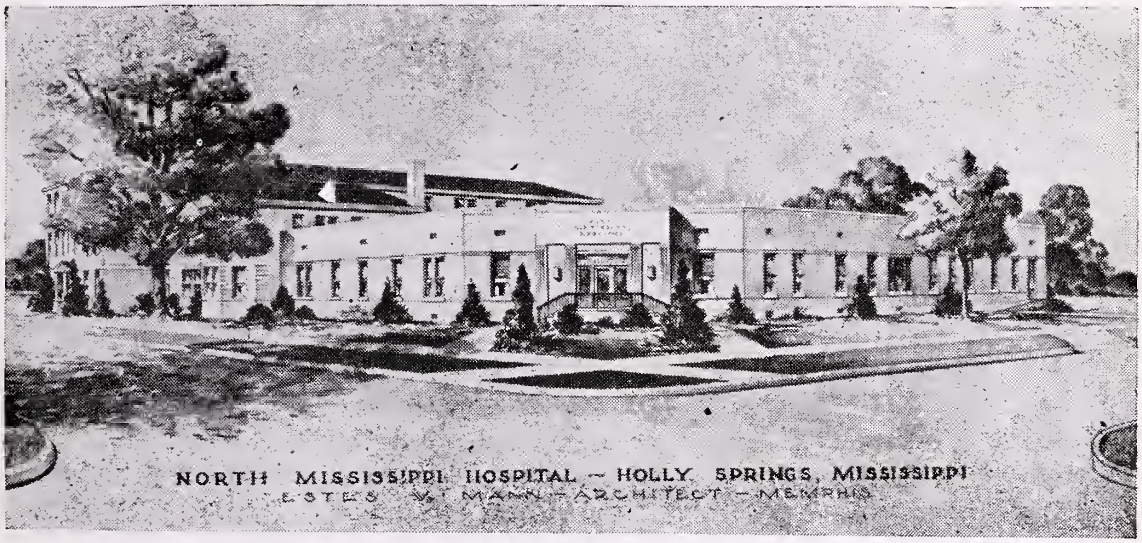
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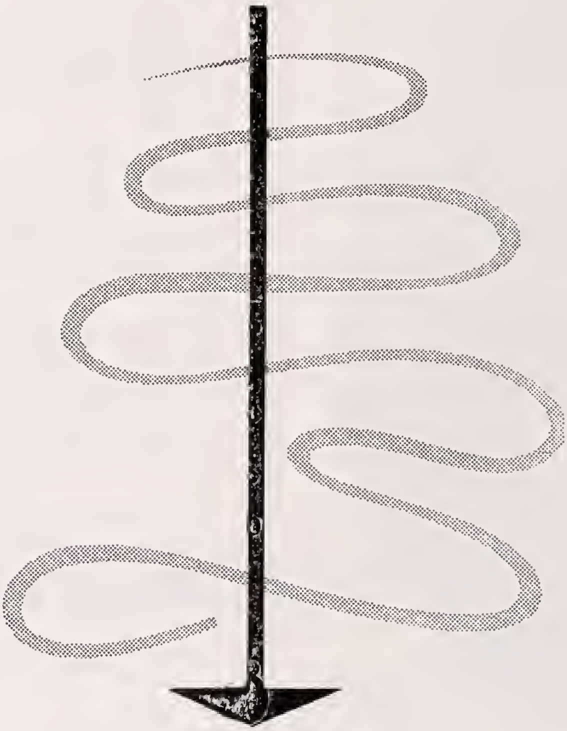

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Casual Comments on Common Colon Conditions*

TATE MILLER, M. D.
Southwestern Medical Foundation
Dallas, Texas

Officially, I bring you greetings and felicitations from the Texas State Medical Association. Personally, I bring you what will be probably the simplest message to which your organization has ever listened. It is well for research and experimental workers to tell of new work and future planned developments, and for great heads of institutions to tell us of their work and results along new lines or with improved methods. It may be a good thing for doctors to report finding and diagnosing one case of a rare disease the like of which had never been seen before in that part, and more likely neither the essayist nor any of the audience would ever see another. But surely, it is also good for us who are just plain everyday doctors, who have our little individual practice and try to cure ordinary conditions to get together and talk casually over our simple daily problems; and surely our commonest and often our simplest question is bowel trouble, usually meaning the colon.

I am not unfriendly toward the colon, and I think that it is a nice organ that from time immemorial has been suspected, maligned and mistreated. In the thirty-two years of my practice of gastroenterology I have seen it washed from below by recognized M. D.'s with many solutions, from coal oil to acroflavine, of many temperatures for many conditions; and cecostomies and appendicostomies done to run solutions through from above, but I honestly think that for ordinary purposes an enema of normal salt water (about a tablespoon of salt to a quart of water at about 100°) is the only safe solution to use, and if the enema is taken lying flat on the back and the container not elevated more than thirty inches above the patient's hips, that it can be used indefinitely and at times with advantage and very often with comfort or pleasure to those who just love to take enemas. I do not know a reason for inserting the rectal tube or tip more than two inches. One or two enemas of plain water or with soap suds or glycerine, turpentine, etc., pre- and post-operatively, probably hurts very little; but if an enema is to be used at all frequently, normal saline is best. It is to be remembered that the oral and gastric mucosa are the only ones designed to handle plain water.

I have seen the colon surgically lifted by recognized surgeons if it seemed low, lowered if through incomplete rotation it seemed high, fixed in place if it seemed too loose and removed for imaginary autointoxication due to moderate malfunction; but for none of those conditions do I consider surgery justifiable.

During the heyday of foci of infection, since a small amount of infection in a tooth, tonsil, etc., was considered fraught with so much danger and could cause many things, the colon was so big and so constantly infected its potentialities for harm were magnified and much effort made to keep it purged clear of its normal residue, to change the character of its bacterial content and to increase the size of its excretion thereby providing that unusual bulkiness, reported to be so dear to the heart of egotistical old men.

All these things resulted mainly from mistaken medical concepts and teachings for generations.

Really the colon is not a vital organ and does not have a great many conditions that require much treatment. Its functions are relatively simple and we feel reasonably well understood.

In civilized man the most important function of the colon is probably that of retaining fecal residue until it can be conveniently discharged; and being about the only animal who intentionally postpones a normal desire to defecate, human beings and perhaps house-broken dogs are the only ones that get constipated. The next most important function is that of water conservation, practiced when the right colon, and to a less degree the transverse and left, returns to the blood the copious liquids that have been poured into the small intestine to facilitate digestion and absorption of food. This function may not be so important to the city dweller or modern man who is rarely more than a few feet from running water, but to the savage who lived and hunted across arid areas, at times learning to go two days without water, this conservation was a highly useful and necessary provision, and this savage man helped pave the way for our present so-called civilization.

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*Delivered at the fifty-ninth annual session of the Mid-South Postgraduate Medical Assembly, Memphis, Tenn., Feb. 10-13, 1948.

The colon ordinarily is less sensitive to nerve impulses than the small intestine. Large masses of accumulated feces may lie in the transverse or descending colon, sigmoid or rectum without provoking conscious contractions. Theoretically the passage of a mass from the sigmoid into the rectum stimulates a conscious desire for a bowel action, but many phlegmatic patients, who habitually fail to gratify immediately an urge for a bowel action, develop a lack of rectal sensitivity and can carry indefinitely and unconsciously large accumulations in the rectum. In sensitive individuals, however, this rectal pressure is symptom productive. It has been demonstrated by Alvarez and others, that packing the rectum of sensitive patients with gauze or cotton, causes them to complain of a dopy languid feeling, perhaps an occipital headache, and in general the symptoms usually attributed to autointoxication, which symptoms clear quickly on removal of the foreign material. The rectum is sensitive to pressure of 2 or 3 mm. and is distressed by pressure of 20 to 60 mm.

The ability of the rectum and colon to absorb water, salt, sugar and a few drugs is common knowledge.

Of course, the commonest complaint relating to the colon is constipation and the remainder of the day could be unprofitably spent in a discussion of all its various aspects. I use the word complaint advisedly because I do not believe there is such a disease, but if there is such a disease, it must be very rare. Usually it is not malfunction but a mistaken idea. That constipation holds so prominent a place in the minds of the laity has many causes, and the idea goes far back into antiquity, and owes its inception mostly to the teachings of healers of all times. Within the memory of many of us is the time when to constipation, autointoxication, and intestinal putrefaction were attributed the cause of almost all diseases for which some other cause had not been proved, and when many a doctor's reputation was built on the efficacy of his laxative prescription. On this foundation of constipation, autointoxication and intestinal putrefaction was built a large part of the treatment of disease, as well as an institution called Battle Creek. And yet, in the light of our present knowledge they probably do not exist. More recently the radio has contributed, for profit, much to the constipation fear. From 1916 to 1926 when I was not busy at something else I spent my time teaching medical students and telling doctors of the dangers of constipation, from 1926 to 1936 I spent my time telling doctors of the dangers of laxatives, and from 1936 to 1948 I spent much of my time wishing that I had kept my mouth shut for the preceding twenty to thirty years.

A satisfactory definition of constipation is a bit difficult. Dorland's Medical Dictionary defines constipation as being infrequent or difficult emptying of the bowel, but the patient's conception, which is the one we must contend with, is more a failure of the bowel to empty itself with a frequency or a fecal volume or consistency or calibre, etc., that coincides with the patient's preconceived and often weird idea of what is normal. Many of them have one perfectly normal stool but feel that they should have two or three such, but most of them take laxatives every day or two and are afraid to wait a few days for the bowel to catch up. Very often the patient is terrified by the idea that he will absorb poisons from retained feces and has kept his colon irritated for years taking three to twelve assorted laxatives daily, in addition to eating residue foods and taking frequent enemas of irritating solutions. This habit of barely exhibiting food to the intestinal tract before snatching it away does not starve the patient as much as might be expected because most food absorption takes place in the few hours it remains in the small bowel. He often complains that his constipation is in the upper bowel or the lower bowel or the right bowel or the left one, or the small bowel or the large one, or that the lower bowel empties but the upper one packs, etc., so that our problem is often not so much diagnosing a disease as it is correcting a mistaken idea. Of course, in our routine study we must satisfy ourselves as to rectal strictures, fissures, hemorrhoids or impactions, rectoceles, obstructing tumors and adhesions of the intestinal tract or of pressure of fibroids, cysts, etc., and to do this, as well as to satisfy the patient, a complete physical examination and watching a barium meal go all the way through the tract are necessary. In this connection may I urge routine proctoscopy, introducing the index finger into the rectum. Many a case is purged for twenty years before a rectal stricture is discovered and operated or dilated. Of course, many of these tight sphincters are just a result of the feces being kept liquid by laxatives for years and no firm stools being passed to maintain normal dilation and elasticity of the sphincter. Incidentally, with these cases of tight sphincter, in the absence of scar tissue or other pathology, I still use graduated bougies like the old Young's dilators to reëstablish an adequate opening. Proctoscopy is easy and necessary and often informative and the patient appreciates it and is impressed by a complete examination. A high percentage of colonic pathology is visible through a proctoscope, and many colonic diseases can be diagnosed no other way.

For years I tried to handle these complainers of constipation and laxative takers without x-ray progress meal but usually was unable to convince them that their bowel really could move without help; and they listened to me, and then went to someone who would x-ray them. Since we must convince or assure ourselves that there is no organic obstruction and since we are treating an erroneous idea, an x-ray observation is reassuring to us and psychologically good for the patient, and proves that material can go through the intestinal tract unaided. A history of the patient is helpful.

Asking a patient to describe his or her stool is one of the best leading questions I know. If he answers, "Hell, Doc! I don't know a thing about them; I just pull the string and flush it away," I know he is not neurotic; and if he has a complaint, I had better consider it very seriously as being on an organic basis; but if he can describe in detail each stool for days back, in the absence of blood or recent changes in bowel habit, that patient is likely to be more apprehensive and anxious than otherwise.

In x-ray progress meals when the barium is left in the colon several days there is a danger of a rectal impaction, and a barium impaction is a very painful and difficult thing to get rid of. This danger is practically always avoided if a heaping teaspoon of siblin or muscilose or metamucil or mucara are given with the barium. To save time, I give one-half of the barium meal at 7 p.m. followed by siblin and repeat both at 7 a.m. the next morning. I have the patient report to x-ray for fluoroscopy at 10 a.m., at which time the progress of the fifteen-hour meal, and at the same time any obstruction or gross interference of the small bowel will be noticeable, and of course the stomach can be refilled and studied at this time. We know that the stomach usually is empty of a barium meal in three hours and that a residue at five or six hours is of definite significance, and we know pretty well as to the time it takes the small bowel to empty, but after the barium passes the ileo-cecal valve no rule applies and the colon handles the barium in its own individual fashion. Only the cecum and ascending colon may be filled, or even in the worst so-called constipation case the head of the meal may have reached the sigmoid or rectum. Most often the head of the meal is at or around the splenic flexure. If the material has not reached the sigmoid or rectum, I simply let them go another day and look again, until I can say truthfully that I have seen the material go through the colon, at least down to a point to where I can see with a sigmoidoscope. After that a barium enema may give some additional information.

In general practice or if one does not care to bother with the expense of an x-ray study, much the same information can be got by giving the patient some pieces of charcoal, or a handful of currants to chew up, or swallow a capsule of carmine at a given time and note when the specks of charcoal, or the currant skins, or the red color first appears in the stool. It is thought that these materials and perhaps the barium pass through the bowel somewhat faster than ordinary food residue. It is well to warn the patient not to be disturbed if bits of charcoal or currant skins remain visible in the stool for four or five days.

Mulinos found that half his test cases passed most of the carmine in the first stool in 6 to 48 hours and half passed most of it in their second stool in 9 to 98 hours. I have a stool specimen examined for occult blood, for parasites, ova, undigested meat fibers, starches and fats, so that I can assure the patient that his absorbent food is really being digested and absorbed. It is, of course, well to explain that the tomato skins, spinach leaves, unmasticated peas, beans and grains of corn that they see in their stools are a perfectly normal finding.

Having proved as one can prove that material can go through in a reasonable period of time and that the nutritious portion is really being absorbed, I do not know a better thing to tell a patient than the old railroad track story of Alvarez. As to treatment, there are a few who can be given my old Navy advice, "Keep on eating and something is bound to give," but most of them have to be helped along. They must learn the habit of a regular time one-half hour after breakfast. They must be told that breakfast is the meal that moves the bowels because the accumulated overnight bile secretion in the gall bladder is more concentrated and that the gastro-colic reflex is more active after a night's rest, and the time element is more easily controlled so that the desired thirty-minute interval after breakfast can be arranged. They must be told always to eat a big breakfast, containing some prunes, prune juice, honey, syrup, jelly, etc. I guess bran is all right, but I won't use it.

Two full glasses of water on rising is a helpful practice, and I do not much care if it is hot or cold and have no objection if they want to add a little lemon juice or a pinch of salt or soda. Five minutes exercise before breakfast is helpful, particularly floor exercise, raising legs together and separately and rising to a sitting position or pushing bricks up and down with abdominal muscles or rolling a heavy metal ball around over the abdomen, but I can't get patients to do them. I can usually get them to take some of the hydrophyllic colloids immediately after breakfast with lots of water. If the first part of the stool is hard and dry and difficult to get started, I can get them to inject three or four ounces of linseed or cottonseed oil into the rectum at bedtime, with an ear syringe to soften it up. If their bowels go two or three days without moving, I get them to take a small enema of normal saline one-half hour after breakfast. I do not give laxatives, but years ago I think that I got very satisfactory results by giving all these instructions and in addition giving them a six-ounce bottle of aromatic cascara with instructions to take a teaspoonful at bedtime and to put a teaspoonful of water back in the bottle and to keep it up indefinitely, so that as the potency of the medicine wanes, the effects of the instructions and habit increases. One nice lady, the last I heard from her, was still using the same bottle after three years and getting a satisfactory daily action.

In this whole procedure, however, when one's living condition and situations are such that they have something to do other than get their bowels to move in accordance with my idea of normal, I am not greatly distressed if they cheat a little and slip back to some mild laxative from time to time. I have three elderly friends who are reasonably hale and hearty and well past ninety who have for sixty or seventy years taken their senna, or their cascara, or aloin regularly. My mother, living at eighty-one, after raising her own ten children and three others, all the hard way, is not just now very robust, but I very much doubt that the two lapactic pills she has taken each night for the past sixty-eight years have contributed much to her fragility. In the absence of a disease process, I doubt that laxatives hurt very much. The main thing is still to assure yourself that the patient has no significant pathology and to make him quit worrying, by whatever method that seems most appropriate in a given case. Certainly, incorporated in the treatment must be some explanation and assurance, correction of anaemia, hypothyroidism, rectal pathology, avitaminosis, etc., if present. Diet for this condition has often been overplayed and misdirected, and too much bulk and at a sacrifice of calories and too much cellulose at the sacrifice of protein and perhaps fat, have been harmful.

I do not put the patient to bed for three to six weeks or three to six days as can be done, and possibly should be done, in many of our large endowed institutions. Very few of my patients can afford the loss of income and the attendant expense of going to bed for long periods of observation or rest unless they have tuberculosis, or a broken leg, severe chronic ulcerative colitis, etc., and I doubt its necessity. Endowed institutions with full time staffs can do many things that we who are out making a living from the surplus funds of our practice cannot do.

Chronic Diarrhea

First in importance and seriousness is chronic ulcerative colitis, which has been previously and variously designated as colitis gravis, suppurative, idiopathic, ulcerative, non-specific and thrombo-ulcerative colitis. Its cause has not been determined to the profession's general satisfaction. At the last meeting of the A.M.A. at Atlantic City, much and prolonged discussion was given to the cause of this condition as well as peptic ulcer; and if anyone was present who could not go back home and tell of the time he discussed a paper before the A.M.A., I didn't see him.

The cause is not known. That it is an after result of bacillary dysentery is held by many students. European writers emphasized the frequency with which chronic ulcerative colitis followed World War I bacillary cases. This has not been borne out over here from the cases of bacillary of the recent war. Bargen and his co-workers followed 102 cases of bacillary dysentery for 16 years with only one occurrence of ulcerative colitis.

Early acute ulcerative colitis and bacillary dysentery are almost identical pathologically, and proctoscopically, and roentgenologically. Experimentally attempts to culture bacillary organisms from ulcerative colitis cases have usually been unsuccessful, but culturing bacillary organisms from bacillary dysentery cases after the first few days are also unsuccessful.

Bargen's work in culturing his diplo-streptococcus in pure form and with this organism reproducing the condition in dogs and rabbits, and from the animals further reproducing identical pathology in other animals, has not been universally accepted or duplicated often by other workers. That ulcerative colitis is a result of amoebiasis was held by some.

Bacterium necropharum and almost all other colonic organisms have been suspected, and fungae, virus and focal infection have had their advocates. That it is an allergic manifestation with milk as by far the chief offender has long been the contention of Andreson, who disregards skin tests and uses the principle of food elimination diets.

So long as the subject has been studied, the presence of emotional and psychic problems have been evident, and since this is the age of advancement in neuropsychiatry, the importance of psychic elements is being more and more stressed and more and more accepted.

A dietary low in the protein and vitamin has been blamed.

Bockus, from whose books I have freely drawn, emphasizes that with the natural barriers of the colon lowered by these various conditions that bacterial invaders can bring about inflammatory reactions and finally chronic ulcerative colitis.

The diagnosis is strongly suspected from the history and is confirmed by the proctoscopic and x-ray findings, both of which are characteristic and have been described to you many times. The course varies from a violent thing with a fatal termination within a few weeks to a few months, to an intermittent thing that comes and goes from several decades. Months or years may elapse between exacerbations, pregnancies, intercurrent infections particularly of upper respiratory tract, and emotional upsets predisposing to these recurrences. I have one patient whose three violent episodes have all started during the final three months of pregnancy. Steps to prevent further pregnancies are being taken, and I feel should be taken in colitis cases.

I have never quit being surprised at how desperately sick these patients can get, and just when all hope seems gone, they turn around and get well.

The treatment is a varying and personalized thing and is far more successful than it was thirty years ago when the diagnosis of colitis gravis could well have been, at least in my small practice, "colitis mortalis."

A cheerful optimism and a well-grounded hopefulness are prime requisites on the part of the doctor. Making ward rounds with Bargen is an inspiration.

Bed rest, high calory diet, high protein with supplementary amino acids, blood transfusions, plasma, and supplementary vitamins (A, B complex, thiamine, riboflavin, nicotinamide, ascorbic and pantothenic acids) with K, bismuth, opiates, barbital, bromide, oxygen and the best psychotherapy available are required. All must be brought into play during acute episodes.

Penicillin has been most helpful in skin complications. I have had no experience with streptomycin.

A prolonged sulfonamide discussion is out of place here. Personally, I feel that they are a great aid and have used them all. Sulfathiazole and sulfadiazine have their followers. I prefer sulfasuxidine, 10 gms. daily for 10 to 14 days and then sulfathalidine 5 gms. daily for a week and then give 3 gms. almost indefinitely. My secretary is definitely of the opinion that sulfaguanidine is by far the superior preparation, her qualification for rendering an opinion being that she has had episodes of chronic ulcerative colitis for the past eleven years, and has taken them all. She and my ulcerative colitis cases get together and talk about "my diarrhea."

I think that there are many combinations of causes and several types of organisms that can be at fault, and that various ones may be sensitive to various sulfonamides so that I often shift from one to another.

I have used vaccines and sera since about 1926. They have often seemed highly beneficial, but as before mentioned, these cases get better and have complete remissions without demonstrable cause.

On the surgical treatment of the justification of colectomy, I am competent to speak. The Bargen or Mayo influence is away from colectomy and the Catell or Lahey influence is more toward surgery and so far as my capabilities permit, I have been a disciple of Bargen. The profession is pretty equally divided, perhaps with the older group favoring the conservative medical treatment and the younger group the more radical. Both groups agree that the surgery must be done during a period of remission. We older ones can look back and recall cases desperately sick with extensive ulcerative and fibrotic colon walls, that in later years developed normal bowel habits and showed an essentially normal x-ray picture. However, we must admit being able to recall some malignancies and continued chronicity that colectomy could have averted. Why do old folks want to always look backward to form their opinions, and look forward with some pessimism? We like to look backward because we can see farther in that direction; we are pessimistic because we are in the second half of life's football game; the half in which we will inevitably lose. But surely we must know that with modern sulfa preparation, penicillin for secondary infections, a better use of blood, plasma, saline and vitamins and principally with better surgical technique, that the danger and mortality of and the objections to extensive colonic surgery are lessening each year.

Treatment Between Attacks

High protein, low residue. Live a calm smooth life; avoid respiratory infections; abdominal trauma, and laxatives. Women should avoid pregnancy.

The rare regional or segmental ulcerative colitis is generally conceded to require surgery, and is diagnosable only with the x-ray.

Amoebiasis is always to be borne in mind. The therapeutic test, giving one grain emetine daily for three or four days in undiagnosable diarrheas, atypical rectal ulcerations, unexplained jaundice, liver enlargement or fever, is, I think, safe and often helpful.

Gastrogenous diarrheas. Walter Palmer doesn't believe in them, but he doesn't believe in anything else either. Being one of the recognized leaders in our specialty, his skepticism and insistence on proof of time and refusal to fly off on some new scatterbrained tangent has done a great deal to prevent a lot of us from getting stampeded by some new theories, and for this we are greatly his debtor as well as admirer. I think that they exist and that they are often helped by hydrochloric acid.

Polyps of rectum and sigmoid do not present much problem in that they are easily diagnosed through the sigmoidoscope and easily fulgerated, as I think they should all be, but finding a rectal polyp demands that a barium enema must be done with double-contrast plates to be sure that more polyps do or do not exist above the range of sigmoidoscopic visualization. If they are found, their high tendency toward malignancy plus the present day low mortality in colonic surgery justify surgical relief. May I urge, that if they are found in the plate to be a few in number and scattered in position, that their presence be demonstrated at two or more different examinations before radical treatment is instituted.

The above refers to the simple adenomatous polyp, and to the extensive familial polyposis. The fibrous tissue polyp from an old chronic ulcerative colitis does not have so strong a tendency to become malignant; it can disappear and is entitled to a longer observation.

Sarcoma of the Uterus; Report of a Case of Primary Endometrial Sarcoma Associated with Inversion of the Uterus*

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Mobile, Alabama
and
B. BERNARD WEINSTEIN, M. D.†
New Orleans, Louisiana

In 1845 the first microscopic diagnosis of sarcoma was made by Lebert[1]. In 1860 Carl Mayer described a case of uterine sarcoma before the Obstetrical Society of Berlin, giving the clinical history, and Virchow discussed the pathology[4]. W. Langerbeck reported the first case of sarcoma in an inverted uterus in 1860[9].

Sarcoma of the uterus may be seen at any age, however, it is most frequently found at the menopause. Childbearing does not seem to affect its incidence. It occurs relatively more frequently in the white than the colored, Novak reporting 53.6 per cent in the white race contrasted with 46.4 per cent in the colored. Family history bears little significance; Novak noted only 5.4 per cent of his series had a family history of malignancy[7].

Sarcoma of the uterus constitutes 1.3 per cent of all uterine tumors although 3.5-4.0 per cent of all uterine malignancies are sarcomatous[4]. Goldberger in 1941, reviewing the literature, noted sarcoma of the uterus occurred once to every twenty-eight cases of carcinoma of the uterus[2].

Fibroids with Sarcoma

Kimbrough, in 1934, reviewed 3,388 patients with fibroids and found that 1.02 per cent developed sarcoma[6]. Vogt collected 72,116 cases of myomas from the literature and found 0.4 per cent to have sarcoma. In 2,260 cases of fibroids recorded at Touro Infirmary, there were only 20 associated sarcomas or an incidence of 0.89 per cent.

Primary Sarcoma of the Endometrium

Kimbrough, in 1934, reviewed the records of the University of Pennsylvania Hospital from 1900 to 1933 and reported seventeen cases of primary uterine sarcoma[6]. No designation of whether or not these were endometrial was made in this report. Endometrial sarcoma may be polypoid and occasionally an apparently benign polyp projecting from the cervix may arise from a polypoid endometrial sarcoma.

McDonald, Broders, and Counsellor reported a series of twenty cases of uterine sarcoma originating from the endometrium. Of these, four patients were alive without recurrence after three years, and three survived after a six-year interval. Seventeen were treated with hysterectomy, and in some instances supplemental irradiation[10]. The prognosis is three times more favorable in sarcomatous change in myoma, than in primary sarcoma.

Origin of Sarcoma

Williams, Kelly, Cullen, and others accepted the theory that uterine sarcoma may arise as a direct transition from muscle cells. This was disputed by Mayer, Frankl, and others who postulated that sarcoma developed from myoblastic, fibroblastic or angioblastic rests which when stimulated by an unknown factor became sarcomatous[2]. From this arose the classification of the sarcomas as to origin: a) those arising from muscle or connective tissue of the uterine wall, b) those arising in myomas, c) those arising in the mucous membrane, d) those arising from blood vessels[8].

This classification is not widely used because of the great difficulty encountered in determining the origin of the sarcoma. Probably the most popular and useful is the classification of sarcomas in accord with the type cellular pattern found: a) spindle cell, b) round cell (this type has early metastasis and is the most malignant), c) mixed cell, d) giant cell[5].

Gross Characteristics

Sarcoma may or may not produce a gross change in the appearance of the tissue in which it is growing. When developing in a myoma, the cut surface of the tumor may have a "raw-pork" appearance, centrally located. The typical whorling of a fibroid may be lost.

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†From the Departments of Obstetrics and Gynecology, School of Medicine, Tulane University of Louisiana and Touro Infirmary, New Orleans, La.

*Read before staff meeting, Touro Infirmary, New Orleans, La., April, 1948.

and should this area become necrotic then may be produced a "brain-like" appearance, with or without hemorrhagic areas. Hyaline degeneration can be confusing, although the consistency of a fibroid with hyaline degeneration is firmer[7]. The submucous fibroid is most frequently involved, and in a series of twenty cases at Touro Infirmary, three of these, or an incidence of 15 per cent, was of the submucous type.

Microscopic Characteristics

Sarcoma developing in a fibroid has the same characteristics as sarcoma in general; morphologically demonstrating wide cell variation in different parts of the same tumor. One portion of the tumor may be very cellular with marked mitosis, while another area of the same tumor may be very inactive.

Evans, in 1920, stated that the degree of mitotic activity parallels the clinical malignancy of these tumors. Fortunately the spindle cell type, which is the most common variety developing in fibroids, shows few or no mitotic figures.[7].

The most frequent route of metastasis of sarcoma is hematogenous, the lungs and liver being the two most commonly involved organs. Next in frequency are the kidney, omentum, and pleura; then the brain, ovaries, and heart. Bone metastases, though rare, have been reported[5].

Symptoms

A sarcoma may produce no symptoms, and when occurring in fibroids may give rise to only those symptoms caused by the fibroid itself. A rapidly growing fibroid, a feeling of pelvic distention, and pain caused by uterine contractions are highly suggestive of sarcomatous change in a fibroid. When the above symptoms occur at the menopause, or after treatment with irradiation, they assume greater significance. Leukorrhea and irregular bleeding may be seen in the submucous or endometrial sarcomas. One should suspect sarcoma in postmenopausal bleeding from a uterus with fibroids, and any abnormal discharge, is significant. Pain, when present, is a late symptom. Cachexia, anemia, weight loss, etc., usually indicate extensive involvement.

Treatment

Rarely is the diagnosis of sarcoma made before surgery. Most frequently the diagnosis, either tentative or final, is made at the operating table. Evans reported seventy-two cases of sarcoma which occurred out of 4,000 cases of fibromyomas, all of which were diagnosed as fibromyomas[2]. It is a wise procedure to section all myomas following removal and subject suspicious tissue to frozen section. Sarcoma of the endometrium is occasionally but rarely diagnosed on curettage. When sarcoma is present or suspected a total hysterectomy and bilateral salpingo-oophorectomy should be performed. Whether this should be followed with a full course of deep irradiation is still debated, however, it was given in our case.

Prognosis

The prognosis in sarcomas arising in fibroids is three times more favorable than that arising primarily from uterine connective tissue. The salvage in premenopausal women is three times as great as in postmenopausal women; this is probably because the older women usually have a primary type of sarcoma[6]. The case reported herein is in the older age group and had a primary endometrial sarcoma. Recurrences after surgery are more than twice as frequent in the tumors presenting large numbers of mitotic figures[7]. Novak reported a follow-up of 50 cases with 30 per cent being alive at the end of five years and 24 per cent at the end of ten years[8].

Case Presentation

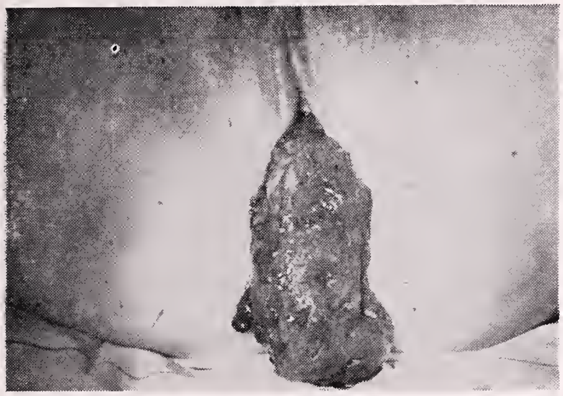
Name—Mrs. B. S.

Adm. No.—Y-1788.

Age—59 years.

Date of Adm.—2-15-46.

History—Mrs. B. S. is a 59-year-old female who stated she had enjoyed good health until a year ago when she noticed a marked loss in weight. Her last menstrual period was four years ago and for the past year she has been annoyed by a continuous white discharge. A few days before admission, while sitting on the commode, she felt her "womb drop out." Following this incident some slight lower abdominal pains developed. She was unable to replace the mass at that time, and was later referred to Touro Infirmary by her local physician who was unable to reduce the uterus. She had had ten pregnancies with nine living children. No operations or serious illnesses were recorded. The remaining portion of the history is non-contributory.



Physical Examination. B. P. 130/80. Pulse 100. Temperature 101° F. Respiration 22. Weight 98 pounds. On admission February 15, 1946, she was described as being "a markedly cachectic white female that looks about ten years older than her stated age." She was lying in bed and on approaching the bedside one became aware of an extremely foul odor. Examination of the head and neck was essentially negative. The only positive finding on examination of the thorax was a soft systolic mumur of the heart heard best at the apex.

The abdomen was soft and slightly distended. The liver and spleen were not palpable. No masses were found in the abdomen, however, both lower quadrants were tender.

Examination of the extremities were negative.

Pelvic examination: Protruding from the vagina was a black gangrenous foul-smelling mass approximately 10 cm. by 20 cm. in size which was soft and friable. Rectal examination revealed only that the vagina was filled with a mass. The remainder of the pelvic examination had to be deferred.

Course in Hospital. Because she was markedly debilitated, symptomatic treatment consisting of repeated blood transfusions, intravenous fluids, and penicillin was given for six days. The gangrenous mass was irrigated frequently with 0.8 per cent sulfanilamide solution which greatly decreased the odor. She was taken to surgery on the seventh day and examined under anesthesia. It was then found that the mass protruding from the vagina was attached, with a rather broad base but with a short pedicle, to the fundus of the uterus and had inverted the uterus. This mass was removed by blunt dissection, being actually squeezed off between the fingers. There was little bleeding and a sulfathiazole gauze pack was left in the vagina for forty-eight hours. The patient was given further supportive therapy for the next two weeks. She was then subjected to a vaginal hysterectomy and bilateral salpingo-oophorectomy.

Convalescence was uneventful.

Pathologist's report was endometrial sarcoma.

Ten days after surgery she was started on deep ray therapy and when seen in January, 1948, she appeared well and had gained forty pounds, weighing 138 pounds. On vaginal examination she was found to have an area 4 cm. in diameter occupying the posterior vaginal wall which grossly appeared similar to hyperplastic endometrium. This was biopsied and found to be endometrial sarcoma. A colpectomy was performed on January 26, 1948, using a combined abdomino-perineal procedure. She was discharged on February 7, 1948. On examination in May 1948 the wound was well healed and the patient was in good health, weighing 139 pounds. No palpable nodes were discovered. We are of the opinion that the recurrence in the vagina was not a metastasis but a seeding either from the previous apposition of the sarcomatous uterine mass while in the vagina, or from surgery.

Summary

A report of a 59-year-old white female with inversion of the uterus, and primary endometrial sarcoma treated by vaginal hysterectomy, later followed by the occurrence of a sarcomatous growth in the vagina treated by colpectomy. A brief review of the literature is included.

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Cancer of the Uterus*

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This discussion will include cancer of both the cervix and uterine fundus.

Fricke[1], of the Mayo Clinic, made the observation that "It is remarkable that cancer in different parts of the same organ, in the cervix and in the fundus of the uterus, can present such dissimilar aspects." Cancer of the cervix develops, usually, during the menopause. It begins insidiously and is highly malignant, growing rapidly, and spreading to adjacent tissues and metastasizing early. Fricke states that 90 per cent of carcinomas of the cervix are squamous cell epitheliomas, and of these about 85 per cent are grades 3 and 4 according to the Broders classification of malignancy. Practically all the remaining 15 per cent are grade 2, almost none being grade 1.

Adenocarcinoma of the body of the uterus develops, as a rule, after the menopause, is of low grade malignancy and thus grows slowly. In a study of carcinoma of the fundus at the John Gaston Hospital, in Memphis, over a period of seven years, from 1940-1946 inclusive, Dr. J. Howard Smith[2] found that 78 per cent developed after the menopause. Although they grow less rapidly than carcinomas of the cervix, unless properly treated, fundal carcinomas will sooner or later spread to other pelvic structures and to distant points.

Unfortunately, carcinoma of the cervix, the more malignant of the two lesions and thus the more unfavorable from the curative standpoint, is far more prevalent than carcinoma of the uterine fundus. At the Mayo Clinic, the incidence of cervical carcinoma is almost three times that of carcinoma of the body of the uterus[3]. Novak[4] reports an incidence of 8 to 1. At the John Gaston Hospital, Smith[2] found that the number of cervical carcinomas exceeded those of the fundus by 11 to 1. There were 365 cases of the former as compared to 33 of the latter.

The majority of cervical cancers may be readily classified from their gross appearance. The group 1 lesions are the small, apparently early ulcers; the groups 2 and 3 are the more extensive ulcerations, though still amenable to treatment, while the group 4 lesions are those seemingly beyond the stage of curability. In the presence of fixation of the uterus and infiltration into the broad ligaments, however, one should bear in mind that these may arise from coincident inflammatory disease or endometriosis, rather than from extension of the growth.

The 365 cases of cervical cancer reviewed by Smith[2] were grouped according to their clinical appearance as shown in Table I.

Table I
CLINICAL GROUPS OF 365 CASES OF CERVICAL CANCER
(John Gaston Hospital)

Group 1	13
Group 2	81
Group 3	122
Group 4	132
Unknown	17

It will be observed that 348 of the lesions were classified. Of these, approximately 73 per cent were in the third and fourth groups. A definite relationship was found between the stage of the disease and the duration of the symptoms. The preponderance of colored patients no doubt accounts in some measure for the large number with group 3 and 4 lesions.

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*Read before Alcorn County Medical Society, Corinth, Miss., April 26, 1948.

Of the 365 patients, 88 (25 per cent) were white, and 277 (75 per cent) were colored. The high incidence of multiple births and long standing chronic infection in negroes may partially explain the prevalence of carcinoma in this type of patient.

It is worthy of note that thirteen of the cancers of the cervix in this group of patients developed upon a residual stump, manifesting themselves from a few weeks to twenty years following supracervical hysterectomy . This finding presents further evidence of the fact, if possible, hysterectomy should always include the cervix.

Diagnosis and Treatment of Cervical Cancer—The most common symptom of carcinoma of the uterus is bleeding. This may vary in extent from an occasional spotting to a rather free and frequent hemorrhage. The second most common symptom is a malodorous leukorrheal discharge. A sense of discomfort in the pelvis and lower back, not unlike that which accompanies the normal menstruation, is often reported. Actual pain is usually associated with an advanced lesion.

As a rule, a carcinoma of the cervix may be recognized on inspection alone. Not infrequently, however, one may have difficulty in distinguishing a cancer from a benign lesion from its gross appearance. At a recent meeting of the Memphis and Shelby County Medical Society, the author reported a case of a young woman who had a decidual reaction on the cervix which simulated carcinoma. The diagnosis of decidua was made from the biopsy. Regardless of the clinical appearance of the lesion or the age of the patient, a biopsy should be made of every cervix which presents a suspicion of cancer, especially if the lesion bleeds on being rubbed or probed.

In this connection, one point should be observed in taking a biopsy specimen. One should not apply the cautery nor cone out the cervix immediately, but should wait until the microscopic report is received. Occasionally, the material may be inadequate or unsuitable, necessitating a second biopsy.

As a supplement to biopsy and curettage, Papanicolaou[5], in 1928, pointed out the value of the vaginal smear in the diagnosis of cervical and fundal cancer and subsequently developed a technic which increased the accuracy of the test[6]. A few drops of vaginal secretion are removed from the posterior fornix of the vagina by means of a glass pipet and suction. The secretion is transferred to a glass slide, stained and examined for malignant cells. The test is especially valuable for demonstrating the presence of a lesion which lies too deeply within the cervical canal for visualization or which is not apparent from the pathologic study. Fremont-Smith and Graham[7] report the detection of cervical carcinoma by this procedure in two patients who presented no gynecologic complaint. Papanicolaou and Traut discovered malignant cells in the vaginal smears of two patients with fundal carcinoma following two curettages which failed to reveal evidence of the lesion. Fremont-Smith and Graham[7] report that the smear was positive in 254 of 285 (90 per cent) of proved cancers of the cervix. They state that the test will reveal malignant cells more consistently if the lesion is small than if advanced, and thus is most useful in the more hopeful cases.

Although this test should not take the place of biopsy and curettage, it seems well worth while. It would seem desirable to have centers established in various parts of each state, to which physicians could send Papanicolaou smears for staining and diagnosis.

Following conization or cauterization, the cervix should be kept dilated, as a precaution against stricture. Occlusion of the cervix might prevent the escape of blood and secretion, and thus disguise the nature of the lesion. For the same reason, women past the menopause should have the cervix dilated routinely. I have found a considerable number of partial and complete strictures of the cervix in both young and older women. It is my custom to request all patients upon whom I operate or treat for a gynecologic complaint to return every six months for a check-up. If we see our patients every six months, even if cancer develops, it is unlikely to be advanced to an incurable stage.

In selected early cases of carcinoma of the cervix, we employ a radical Wertheim type of operation. While in Boston recently, I saw Dr. J. W. Meigs perform a few of his radical operations for early cervical cancer, wherein he removed all the regional lymph nodes and both tubes and ovaries, together with the fundus and cervix. In certain far advanced cases, Dr. Langon Parsons, also of Boston, employs an extremely radical procedure, wherein all the pelvic structures are removed through the perineum following a "wet colostomy." Through a midline abdominal incision, the blood supply to the pelvic structures is divided and all the lymph nodes and organs are stripped down to the perineum. A permanent colostomy is next made and both ureters are sutured into the colon. After closure of the abdominal wall, the patient is placed in the lithotomy position and an incision is made on each side of the labiae majorae, beginning well above the clitoris, continuing into the perineum and ending posterior to the anus. All vessels are tied, and the clitoris, labiae, vagina, cervix, fundus, tubes, ovaries, pelvic lymph nodes, urethra, bladder, anus and rectum are removed en masse. Four drains are inserted and the large opening is closed with two layers of sutures. Dr. Parsons had performed this operation upon ten patients, with two postoperative deaths, one from a transfusion reaction and one from blockage of the kidneys. Unquestionably, this is most radical surgery and should be attempted only by qualified surgeons. Years must elapse before the results can be determined. Not all patients would be willing to go through life with a wet colostomy and without at least one foramen below. I mention this procedure only because it gives us some idea of what can be done to cure cancer in a few selected cases wherein any other treatment might be of no avail.

Unless the diagnosis is made early, cancer of the cervix is primarily a radiologic problem. Radium supplemented by x-ray therapy is the treatment of choice. In the gynecologic cancer clinic of the John Gaston Hospital, which is the teaching hospital of the University of Tennessee Medical School, we endeavor to give a total of at least 800 roentgens of x-ray through four to six ports. In selected cases, we have been giving x-ray with a vaginal cone, in order to determine its effectiveness. Two to twenty-eight days following the x-ray treatments, we admit the patient to the hospital and give 500 mg. hours or more of radium, distributed according to the extent of the disease. Not only do we use radium in the uterus, cervix or vaginal vaults, but often insert 1 to 3 mgm. needles of radium around the cervix, spacing this, also, according to the extent of the disease. Patients are urged to return periodically thereafter for observation.

Masson[3] reports that 41.7 per cent of traced patients at the Mayo Clinic who had malignant lesions of the cervix of all grades were cured by radical surgery with or without radiotherapy alone. Of the traced patients with carcinoma of the body of the uterus, 68.7 per cent were alive and well five years or more after surgical removal, whereas only 21.3 per cent survived for five years following the use of radiotherapy alone. He states, however, that the incidence of five year cures is not a true guide to the relative merits of surgical removal and radiotherapy, in that many patients who were treated with roentgen rays or radium alone had inoperable carcinoma and only palliation was attempted; further, many of the patients were treated before the value of roentgen rays and radium was recognized and when radical operations were attempted in the most advanced cases.

I should like to call attention to the rather rare type of cervical cancer which we know as carcinoma in situ. The vast majority of these lesions will show some invasion of the malignant cells if the entire specimen is sectioned and studied. The best treatment is total or vaginal hysterectomy. After section of the entire specimen, one will be able to determine whether irradiation is necessary. If for any reason the patient cannot withstand a major surgical procedure, a full course of x-ray therapy followed by radium should be given. Just recently, I had a 55-year-old patient with a hypertension of 220/140 and a markedly enlarged heart, who had a carcinoma in situ and a prolapse of the uterus. The preferred treatment was a vaginal hysterectomy with a complete repair. The patient was referred to me by an internist, who agreed that her physical condition would not permit this procedure. She was therefore treated with x-ray and radium.

Occasionally, we are confronted with the problem of pregnancy in a patient with carcinoma of the cervix. According to Masson[3] the prognosis does not appear to be unfavorably influenced by this complication. The treatment which he recommends is as follows: (1) If the lesion is operable and the fetus viable, pan-hysterectomy followed by irradiation is best. (2) If the carcinoma is operable and the fetus is not viable, pan-hysterectomy followed by irradiation is best. (3) If the growth is inoperable and the fetus viable, Caesarean section should be followed by irradiation. (4) If the lesion is inoperable and the fetus not viable, the growth should be treated by irradiation; abortion will, of course, follow.

Results. As is well known, the results of treatment of carcinoma of the cervix and fundus depend upon several factors aside from the treatment itself. Obviously, the results are better in private clinics than in charity hospitals. In private clinics, one deals, on the whole, with well informed patients, and the lesions are less advanced at the time of discovery, the patients coöperate better in the treatment and are more faithful in returning for necessary observations.

Of the 365 patients with cervical carcinoma seen at the John Gaston Hospital from 1940 through 1946, 169, or 46 per cent, were not followed in the Out-Patient Clinic.[2] This rather astonishing figure may be explained partially by the fact that some of the patients lived out of town, though it is probably due chiefly to the previous lack of social service and lack of equipment—a situation which has since been improved. Of the 196 patients who were followed, 92, or 46.9 per cent, died within the seven year period. In these fatal cases, the distribution of the lesions according to the clinical groups is shown in Table II.

Table II

FATALITIES IN 365 CASES OF CERVICAL CANCER

(John Gaston Hospital)

Group 1	1
Group 2	12
Group 3	23
Group 4	56
Total	92

Diagnosis and Treatment of Fundal Cancer. Just as biopsy should be made from every suspicious cervical lesion, in like manner, a curettage should be performed in every case of suspected cancer of the body of the uterus. Spotting or bleeding in a patient who has passed the menopause is an indication for immediate curettage. I believe curettage of every woman near or at the menopausal age who gives a history of irregular spotting or bleeding is advisable. If there is any question as to whether the bleeding is menopausal, a brief period of observation may be allowed to determine this spot. Such a practice is well justified if cancer is found early in one of fifty patients.

Carcinoma of the fundus may be treated by one of three methods: 1) hysterectomy with radiotherapy, 2) the application of radium to the growth, with x-ray therapy over the pelvis, and 3) hysterectomy and excision of the regional lymph nodes. Of these, hysterectomy supplemented by radiotherapy is best. In all cases considered operable, the use of both hysterectomy and irradiation has produced survival rates as high as 79 per cent[2]. The reason surgery and radium combined produces the best results is that radium alone does not always kill the cancer cells. Even after 4000 mg. hours of radium and a full course of x-ray therapy, TeLinde found active looking cancer cells in 50 per cent of his cases[8].

For patients who, because of associated disease, cannot undergo surgery, irradiation has much to offer. This is also true of those with carcinoma which has spread beyond the hope of cure. These patients should not be denied the benefit of palliative treatment. Occasionally, a patient with an apparently hopeless lesion will survive five years or more.

According to statistics, approximately 17,000 women in this country die every year from carcinoma of the cervix and fundus. Despite educational efforts of the physicians and vigorous efforts on the part of the American Cancer Association, Inc., we are making little progress in bringing these patients for examination early in the course of the disease. This state of affairs is due largely to ignorance and fear on the part of patients. Our problem is, first, to instruct every woman in the country in the early signs of cancer and to convince her that it is almost invariably curable if treated at the first evidence of trouble. Second, we, ourselves, should bear in mind that the appearance of abnormal bleeding and a leukorrheal discharge in a woman of any age is a danger signal, and should spare no effort to arrive at its real source. Only by these measures and by proper treatment of all patients with carcinoma of the cervix and fundus will we be able to reduce the number of lesions of grades 3 and 4 and increase the number of grades 1 and 2, and thus succeed in materially improving the present appalling annual mortality from uterine cancer.

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Recent Advances in the Treatment of the Hemorrhagic Diseases*

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For the maintenance of life, a continuous flow of blood under relatively high pressure is essential. To protect against excessive accidental loss of this vital fluid, the body has evolved a series of reactions or mechanisms which collectively can be grouped under the term hemostasis. Most primitive of these reactions is the constriction of blood vessels in response to injury. The physiological importance of this becomes obvious when the anatomy of the vascular system is considered. In the main arteries with their large lumen, thick walls, and the high blood pressure within, contraction alone cannot effectively close the vessel. Unless a ruptured or cut artery is ligated, exsanguination is inevitable. As the arteries become smaller, however, contraction plays an increasingly significant role; in fact constriction alone is sufficient to effect a complete though temporary staunching.

Because contraction is not permanent, the body must supply additional means to accomplish hemostasis. The clumping of platelets resulting in the formation of a plug, may be enough to close permanently an arteriole. The most effective plug, however, is the intravenous fibrin clot. The veins rarely present a serious problem for the simple reason that the blood is under low pressure and bleeding therefore can be controlled by compression.

The capillaries, particularly those supplying the skin and mucous membranes, occupy a unique position in the hemostatic scheme. They are under the control of the sympathetic nervous system and of hormones such as histamine or substances closely related to this compound. Conditions unrelated to the coagulation mechanism may arise which will cause the capillaries to become hyperpermeable and render them incapable to contract after injury. The result is superficial bleeding and oozing, petechiae and ecchymoses and a prolonged bleeding time. Such a condition is designated as purpura. Characteristically the bleeding is spontaneous and usually is independent of the coagulation of the blood. The subject of purpura is too big to be included in this presentation which is limited to the hemorrhagic diseases due to coagulation defects.

A Modern Theory of the Coagulation of Blood

A simple practical concept of the coagulation reactions is necessary in order to understand and treat intelligently the hemorrhagic diseases. The confusion of the past has gradually given way to present laboratory and clinical research. As the result of recent studies, especially in my own laboratory, I have been able to formulate a new concept of the coagulation, which is essentially an extension and elaboration of the theory developed by Morawitz and Fuld and Spiro.

Coagulation is initiated by the agglutination and disintegration of platelets, which liberates an agent that converts the inactive precursor of thromboplastin in the plasma to the active form. Platelets do not, as is still commonly believed, contain thromboplastin, but they furnish the activator of this substance, to which I have given the name, thromboplastinogen. The first reaction taking place is:

Thromboplastinogen plus platelet factor equal thromboplastin. It is enzymatic which explains why coagulation remains fairly normal even in marked thrombocytopenia.

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The second reaction which in the original theory was presented as the first reaction is:

Prothrombin plus thromboplastin plus calcium equal thrombin. I have presented evidence to prove that this equation is stoichiometric, i. e., the amount of thrombin formed is dependent upon the quantity of both thromboplastin and prothrombin in the plasma. This equation is the basis of my prothrombin test and also for my new test, the prothrombin consumption estimation, which will be discussed later.

The third equation is:

Fibrinogen plus thrombin equal fibrin. This reaction, like the first, is enzymatic; in other words, no matter how little thrombin is formed, it ultimately converts all the fibrinogen to fibrin. Obviously, the four basic substances that must be present in blood in order for coagulation to occur are: fibrinogen, calcium, prothrombin and thromboplastinogen. Only the last is in an inactive form and requires an activating agent. A deficiency of any one of these factors will produce defective coagulation and a resulting hemorrhage diathesis.

Of the four essential factors, calcium is the least significant clinically, because the lowest possible concentration in the blood that is compatible with life is still quite adequate for normal coagulation. No hemorrhagic condition has ever been shown to be due to a deficiency of calcium, and there is no unequivocal proof that calcium therapy in any type of hemorrhage has any beneficial effect.

Fibrinogen also is of minor importance. Its concentration must become very low before faulty hemostasis is demonstrable. Interesting is the clinical entity, complete congenital absence of fibrinogen in the blood. Less than ten cases have been reported. During the past year a case has been found in Boston. Though such patients have incoagulable blood, their hemorrhagic tendency, strangely enough, is generally milder thanthat of a hemophiliac. The remaining factors: thromboplastinogen and prothrombin require detailed consideration since most of the important hemorrhagic conditions, other than purpura, can be grouped under deficiencies of these two agents.

Hemophilia and Hemophilia-like Diseases
(Thromboplastin deficiency)

In 1935 Doctors Stanley-Brown, Bancroft and I showed by means of quantitative studies that prothrombin is normal in hemophilia, but that thromboplastin is deficient. With the development of the concept that thromboplastin is derived from a precursor present in the plasma which is activated by the platelet factor, it became necessary to determine whether the precursor was lacking or whether the platelets were defective. By means of the prothrombin consumption test whereby the amount of prothrombin remaining after the completion of coagulation is determined, it was clearly shown that thromboplastinogen is lacking in hemophilia. As the result of this inadequate supply, very little prothrombin is converted to thrombin and consequently the immediate cause of defective coagulation is the small quantity of thrombin formed. The platelets are entirely normal.

The prothrombin consumption test* makes the diagnosis of hemophilia specific and certain. Prior to this test it was not possible to make an unequivalent diagnosis. A prolonged coagulation time, a bleeding tendency and a history of heredity while highly suggestive evidenced for hemophilia, are also observed in other types of bleeding diseases and therefore cannot clinch the diagnosis. In the typical case of hemophilia only a trace of prothrombin is converted even though all the fibrinogen is ultimately all converted to fibrin.

The most important use of the prothrombin consumption test is to guide and to evaluate therapy. Normal plasma contains a relatively high amount of thromboplastinogen. Therefore by giving a plasma transfusion to a hemophiliac, his thromboplastinogen is sufficiently augmented to cause a distinct increase in the prothrombin consumption. A typical example may be cited.

Prothrombin consumption before transfusion —trace.

Prothrombin consumption after 500 cc. fresh citrated blood—40%.

With such an elevation of prothrombin consumption, the blood is sufficiently normal to permit a major operation with safety. By repeated estimations of the prothrombin con-

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To determine the prothrombin consumption, 2 cc. of blood are allowed to clot. After one hour, the serum is tested for its prothrombin content as follows: 0.1 cc. of oxalated human plasma treated with calcium phosphate to remove prothrombin (components A and B) is mixed with 0.1 cc. thromboplastin (Quick) and 0.1 cc. of 0.2 M calcium chloride. To this mixture 0.1 cc. of serum are added and the time determined needed for the formation of a clot. In general the technique and reagents are the same as employed in my prothrombin method.

sumption, it can accurately be determined when more blood or plasma must be given. It should be emphasized that the coagulation time is not a reliable guide, and merely reducing the coagulation time to normal gives no assurance that effective hemostasis will occur.

The treatment of hemophilia is best considered under three headings: (1) immediate management of hemorrhage; (2) handling the complications; and (3) preventive measures. At the outset it must be emphasized that the hemophiliac is in much greater danger from internal than from external bleeding, and that the sequelae from hemorrhage present a much more sinister problem than the actual threat of exsanguination.

In encountering any symptom in a hemophiliac, one should always consider hemorrhage as the first possible cause. Thus, a sudden pain in a joint is always with rare exception a beginning hemarthrosis. Cold, preferably an ice bag, should immediately be applied to keep the vessels of the area contracted. This should be continued until there is no further evidence of persistent bleeding. Usually the dangerous period is about three days. The cold should be followed by heat therapy. Diathermy is particularly valuable. The object is to expedite the reabsorption of blood and to restore the tissue to normal as promptly as possible. A transfusion, preferably with fresh plasma, since it contains the thromboplastinogen which hemophilic blood lacks, should be given if the bleeding is massive or if the resulting hematoma is impinging on structures of vital physiological importance. With the prothrombin consumption test as a means of assay, the isolation from plasma and the commercial availability of thromboplastinogen should soon be a reality.

Among the serious consequences of internal bleeding are ankylosis of joints, pressure atrophy of nerves, muscles and even of bones and other tissue. Often, the deformity or injury is amenable to surgical corrective measures; and now with plasma transfusion as the means and the prothrombin consumption test as a guide, the outlook for the hemophiliac is considerably brighter and more hopeful.

Prevention still constitutes the most important key to the handling of the hemophiliac. Any child with a defective coagulation of the blood should be protected against injury. The type of play during early childhood should be carefully supervised. Later, the selection of an occupation is of utmost importance. Both the parents and the child should be instructed as to the danger of trauma. A slight contusion which in a normal child would go unnoticed may in a hemophiliac cause enough internal bleeding to require hospitalization. A rupture of a small vessel in the neck from the strain of coughing may result in a hemorrhage sufficiently massive to extend into the mediastinum. No one who has observed hemophilia can overlook the fact that the bleeding tendency is accentuated during certain periods, but so far all efforts to correlate the various possible etiological factors have been disappointing. Whether any benefit accrues from doses of vitamin C much above the normal nutritional requirements still remains unanswered. Likewise the therapeutic value of rutin in hemophilia is uncertain.

The old recurring question whether hemophilia occurs in women, can now, in the light of the newer diagnostic methods, be answered with considerable certainty. No true hemophilia (hereditary hypothromboplastinogenemia) has so far been reported in the male. It is likely that the so-called hemophilia cases in the female belong to a distinct entity that clinically resembles true hemophilia, but which is basically different in that it occurs in both sexes, begins in adult life and is presumably acquired. Recently I have studied one such case and found that the causative factor is the presence in the blood of an agent which antagonizes the platelet enzyme, thus inhibiting the conversion of thromboplastinogen to active thromboplastin. In my case the quantity of the inhibitor was so great that it even antagonized the enzyme of the platelets of the donor's blood, which led to a serious predicament in that it rendered transfusions entirely ineffective. So far there is no known treatment. The differential diagnosis between the acquired hemophilia-like disease and hemophilia is simple. By mixing one volume of freshly drawn normal blood with nine volumes of hemophilic blood, the coagulation time is restored to normal, whereas if the blood is from a hemophilic-like subject, the coagulation time remains prolonged.

Hypoprothrombinemia

Following the discovery of vitamin K and the development of a simple method for determining prothrombin, a simple concept of prothrombin evolved which has been of tremendous practical value. It can be epitomized as follows: prothrombin, a unitary substance, is synthesized with the aid of vitamin K by the liver and either a lack of vitamin K, or injury of the liver, will cause a hypoprothrombinemia. Early in this study I called attention to the large amount of prothrombin in excess of physiological requirements, and I showed experimentally that nearly 80 per cent could be lost before a serious hemorrhagic tendency developed.

Soon after I began my research on prothrombin, I made several findings which made me suspect that prothrombin was not a single unitary substance but like complement was perhaps composed of several components. In 1943 I was able to present the evidence to show that this conclusion was correct. It had earlier been found that prothrombin decreased in stored plasma and it was assumed this was due to the deterioration of the unitary prothrombin. My studies, however, showed that prothrombin, i. e., the substance which is diminishing in dicumarol poisoning, remains intact even in very old plasma, but that a hitherto unrecognized agent is destroyed on storage. I named this factor component A of prothrombin, but recently have redesignated it the "labile factor" and applied the term component A, to another new constituent of the prothrombin complex which I recently discovered. A little later Owren in Norway independently also established the existence of the labile factor by finding it markedly diminished in a patient with a severe hemorrhagic diathesis. He named it "factor V." Since then others have also published findings indicating additional factors besides the traditional unitary prothrombin, but a successful correlation came only after I had the good fortune to be able to study two families in which several members of each had a congenital hypoprothrombinemia. Surprisingly, the defect in the first family was distinctly different from that of the second family and when the blood of the one was mixed with the other a mutual correction occurred with the result that the mixture had practically a normal prothrombin time. Thus it became obvious that basically there are three types of hypoprothrombinemia, the first is a lack of a component which I designate "A"; the second, component B; and a third (based on Owren's case) the labile factor.

At present only one family in which component A is deficient is known, the one which I have reported and which I am still studying. Two brothers age 2½ and 8 each have a prothrombin activity of 30 per cent. A short time ago I obtained evidence suggesting that they utilize vitamin K less effectively than normal individuals, and that the prothrombin activity may drop below their fixed level of 30 per cent. Large doses of vitamin K will again raise the prothrombin to their fixed or original level but no higher. Recently, I found that the father has a very mild hypoprothrombinemia which makes it appear that the defect is hereditary. The two boys are fortunate in that their prothrombin level is just on the fringe of the hemorrhagic zone, and therefore they have only a mild bleeding tendency. This condition responds well to plasma transfusion, but the resulting elevation of prothrombin is only temporary.

Lack of component B, which I found accounted for the hypoprothrombinemia of my second family can produce a serious hemorrhagic condition provided the concentration of the component is low enough to reduce the prothrombin activity to less than 20 per cent of normal. Component B is identical with the factor which is diminished by dicumarol. The congenital low concentration of component B is hereditary. It is not sex-linked and occurs in both men and women. It does not respond to vitamin K, but the prothrombin concentration can be raised above the hemorrhage level by plasma transfusion.

The only known case of deficient labile factor is the one described by Owren. It is likely, however, that the patient reported by FitzHugh and Rhoads as the first case of idiopathic hypoprothrombinemia also belonged to the class of labile factor deficiency. Transfusion is the only means available at present to increase the prothrombin activity. The condition is not benefited by vitamin K therapy. Interestingly, the concentration of the labile factor even in normal human blood is low. We have found that rabbit blood contains 50 times more.

The hemorrhagic diseases due to acquired hypoprothrombinemia offer the best response to therapy. The first entity to be considered under this general class is the hemorrhagic diseases of the newborn. It has been repeatedly shown that many infants during the first few days of life have a pronounced hypoprothrombinemia especially if there is malnutrition in the mother. While only a very small percentage of these infants bleed seriously, it must nevertheless be recognized that they are in potential danger. The prophylactic use of vitamin K either given to the mother prior to delivery or to the child shortly after birth prevents the hypoprothrombinemia and its resulting threat of bleeding. If the hemorrhagic state has developed, vitamin K will cure it with amazing promptness, and the reason for this is made clear by our recent studies. We found that the severe hypoprothrombinemia in a chick caused by dietary vitamin K deficiency was completely corrected in less than four hours by the intravenous injection of 5 gammas of menadione. On a comparable weight basis, as little as 0.2 mg. should accomplish the same in a newborn infant. The prophylactic use of vitamin K cannot be too highly recommended, and when generally adopted as a routine will reduce the incidence of the disease to the vanishing point. If a baby requires an operation during the first two weeks of life, and vitamin K is not given preoperatively, the child is put in unjustifiable jeopardy, and I would classify such an omission as gross negligence.

Since a considerable supply of our vitamin K requirement comes from the bacterial activity in the intestines, the possibility of hypoprothrombinemia resulting from the use of sulfonamides or antibiotics given to suppress intestinal infection should be borne in mind. These drugs may so reduce the bacterial flora that little vitamin K is synthesized. Therefore whenever a patient is on this type of therapy over a long period, vitamin K should be given daily.

Every physician is familiar with the efficacy of vitamin K in the prevention of postoperative bleeding in the jaundiced patient. In fact "cholemic bleeding" is a term which is practically only of historic interest now. If liver injury has occurred the hypoprothrombinemia may not respond to vitamin K, in which case a transfusion preferably of plasma will be required. The literature contains relatively few references to bleeding in hepatic diseases yet its occurrence is not too uncommon. Only a few weeks ago I saw a patient who was severely hemorrhaging. She had a prothrombin of only 7½ per cent. On autopsy it was found she had extensive fatty necroses of the liver. Her bleeding was brought under control before death by means of transfusion and large doses of vitamin K.

A new type of bleeding which is increasing in frequency is the resultant of the indiscriminate and uncontrolled use of dicumarol. The drug should never be given unless the prothrombin concentration is accurately determined by my method daily or at least every few days. It must be remembered that when the prothrombin concentration is below 20 per cent the patient is a potential bleeder and any trauma will initiate active bleeding. To counteract this type of hemorrhage, an immediate plasma transfusion and a large dose of vitamin K (50 mg.) intravenously will be found effective. Other drugs such as salicylate may cause hypoprothrombinemia and may in a sensitive individual actually cause bleeding. But this occurs so rarely that it is clinically of minor significance.

Summary

The two principal classes of hemorrhagic diseases caused by defective coagulation of the blood are (1) thromboplastin deficiency and (2) hypoprothrombinemia. The most important disease under the first class is hemophilia. Its basic defect is a lack of thromboplastinogen. By means of plasma transfusions, the lacking thromboplastinogen can be supplied and the blood made temporarily sufficiently normal to effect hemostasis. Various therapeutic measures useful in this disease are discussed.

The hypoprothrombinemias present a complex picture, since prothrombin has been found to consist of three components. Clinical cases illustrating deficiencies of each of these three components have been found and reported. All the acquired cases of hypoprothrombinemia so far reported are due to one component, namely "B." Therapeutically, all can be divided into two groups: 1) those that respond to vitamin K and 2) those that do not but can be controlled by plasma transfusion.

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Cancer Is Curable Now, Under Favorable Circumstances*

HARLEY R. SHANDS, M. D.
Jackson, Miss.

THE IDEA is held that it will be quite worth while to stress from time to time the encouraging and favorable facts to be found in the battle against cancer. From the very nature of the disease, cases which are treated early and cured are not usually heard of by the general public. People do not like to advertise the fact that they have had cancer. The opposite is true of those unfortunate patients who have allowed the golden opportunity of early recognition and treatment to pass, and must endure the prolonged suffering of a cancer death. I quote from Dr. Norman Miller, of Ann Arbor:

"While much has already been accomplished toward the control of cancer, it is essential that physicians realize how much more can be done with the tools now at their command. As the physician's experience with cancer increases, he is apt to become pessimistic and too easily reconciled into accepting a high cancer mortality. This pessimism as well as the accompanying apathy are easily understood. Most cancers are in an advanced stage when first seen and their care does not give rise to optimism. The common habit of looking forward to a new cancer 'cure' as the only solution to the problem serves as pap for this defeatist philosophy. It is easier to wait for a new cure, and this idea is nurtured by the present era of scientific 'shenanigans.' To assume that things are in a bad way and nothing much can be done about it until a new cure is available is faulty reasoning and the key to much of the present difficulty. All physicians confidently hope for a new cure, but if history repeats itself a new chemical or atomic cure will be of only limited value and its effectiveness will still be dependent on type of cancer and extent of involvement. A new therapeutic weapon will be most welcome, especially in the management of cancers not suitable for or responsive to either irradiation or surgery. But even though a new 'cure' becomes available and proves to be as effective as surgery or irradiation—which would indeed be history making— physicians will, at most, find themselves at the beginning of another era such as occurred with the advent of surgery at the beginning of the present century and again fifteen to twenty years later with the arrival of clinically usable irradiation. In this day of far-reaching discoveries and increasing scientific research the announcement of a new 'cure' for cancer will not occasion great surprise but, unless its potentialities are considerably greater than either surgery or irradiation, the problem will remain as it is today, essentially one of prevention and early treatment. Unless this realistic point of view is adopted, anticipation of a new cure for cancer will minimize the value of existing weapons and encourage the adoption of **laissez faire** attitude, both of which work against real progress in control of cancer. Actually there is plentiful reason to be hopeful. The increasing incidence of cancer is largely explainable on the basis of the fact that people live longer and therefore reach the cancer-susceptible age. Survival curves continue to show improvement. Most important, however, is the fact that physicians now have within their grasp the means to exert a powerful influence on many cancers, and especially cancer of the female genitalia." **Jr. A. M. A.** 1-17-48, p. 163.

The following paragraph appeared in a recent cancer bulletin: "Every doctor's office should be a cancer detection center. Although roentgenological and laboratory studies are essential to the proper diagnosis of some forms of cancer, these procedures are by no means necessary for the observation and recognition of many neoplastic lesions. Precancerous or cancerous symptoms often may be recognized by the instruments which the general practitioner either wears or carries in his kit. He needs eyes, ears, fingers, and an inquiring mind and will. Given these God-granted attributes and a small handful of instruments, the family doctor will see, hear, and feel the symptoms of cancer long before the patient finds his way to the specialist. Upon the shoulders of the family doctor, then, rests the responsibility of recognizing the symptoms of cancer while it is still amenable to treatment."

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If the family physician does not thoroughly understand the abnormal condition presented by the patient, he should without delay and without holding the patient under observation, ask for a consultation with a surgeon, or other specialist. Cancer starts with a local disease. There comes a time, some day or some night, when the malignant cells spread from their original location over the body generally, so every cancer should, in a way, be regarded as an emergency; proper treatment should be instituted at once, before it is forever too late.

The American College of Surgeons now has on file a record of over a hundred thousand cases of five-year cures of cancer. In January of this year Dr. Crowell of the American College of Surgeons wrote and requested that I send to him a record of the cases of cancer which we have treated who have remained well over five years. Following this we sent out a form letter to the cancer patients whom we had treated in the Mississippi Baptist Hospital and we were able to collect 62 proved cases of cancer which remained well from 5 to 25 years. All of these cases of cancer were proved by microscopical sections in the hands of well known pathologists. We had a number of other cases of clinical cancers in which microscopic examinations were either not made or the reports lost. These were not reported to the American College of Surgeons. My complete records go back to 1923 only; on account of failure of my health, I had to leave Jackson in 1917 and the records before that were lost.

In the list of these cases treated between 1923 and 1948 there were 24 carcinomas of the breast still well; 15 of the cervix uteri; 5 of the ovary; 5 of the colon; 1 of the thyroid gland; 1 of the submaxillary gland; 1 of the larynx; 2 of the body of the uterus; 1 of the tongue; 1 of the lip, besides a number of skin cancers. These cases are now on file in the College of Surgeons.

In reviewing these cases, a number of interesting facts were discovered. First and foremost, the cancers that were discovered and treated early uniformly gave the best results; however, it was surprising to find remarkable cures after treatment of apparently far advanced disease. Four of the patients had multiple cancers developing at different times and remained well following surgical treatment.

Mrs. W. C. T., treated for squamous cell carcinoma, grade 3, of the cervix uteri, in 1937. Dr. Paul Kimmelstiel was the pathologist. She had a radical amputation for a scirrhous adenocarcinoma, grade 3, of the right breast, with involvement of one lymph node, in 1938, Dr. J. C. Henthorne, pathologist. This patient remains entirely well.

Mrs. W. J. B. had a diffuse carcinoma, gland-cell type, of the right breast, Dr. R. L. Thompson, pathologist; she was operated upon in 1934. She developed an entirely different cancer of the left breast in 1943; following operation she remains entirely well.

Miss A. H., operated upon in 1931 for carcinoma of right breast, R. L. Thompson, pathologist; in 1940 she was operated upon for a cystic adenocarcinoma of the right ovary, Dr. J. C. Henthorne, pathologist; this patient remains well of both cancers.

One other patient, **Mrs. W. H. P.**, whose case was not included in the American College of Surgeons' list, was operated upon for a carcinoma of the uterus in 1945 and in 1946 for carcinoma of the caecum. She is entirely well. This was not reported to the College of Surgeons because it has been only four years.

It is interesting to note that our records reveal only four cases of multiple different cancers; the rate of cure for these cancers is 100 per cent. There is a somewhat analogous situation in regard to tuberculosis. When I was being treated for this disease in Colorado thirty years ago there were literally multiplied hundreds of cases in Colorado Springs who had recovered from tuberculosis; it was surprising to learn what a large percentage of these arrested cases had had one or more members of their families die of tuberculosis before they developed it.

If a patient has been successfully treated for one cancer, he will waste no time in seeking a good surgeon when symptoms of a second cancer appear.

We had one case who remained well for ten years following operation for cancer of the breast but later developed metastases and died. This case, of course, was not reported to the College of Surgeons.

I have requested a few of the unusually interesting patients to appear before you and I am gratified that some of them were kind enough to grant my request.

1. **Mrs. W. C.** was operated upon on June 4, 1936, twelve years ago, for an adenocarcinoma, grade 3, of the stomach, the microscopical diagnosis having been made by Dr. A. C Brod-

ers of the Mayo Clinic. She remains well now after partial gastrectomy, Polya type of operation.

2. **Miss M. S.**, a maiden lady, age 40, was one of the first of the few cases in which we left radium intra-abdominally against an irremovable area of malignancy. She was first seen in September 1935, by Dr. Frank Hagaman, when she was suffering with acute abdominal symptoms. She was taken immediately to the hospital and after careful studies we were unable to make the correct diagnosis. We thought she had acute pancreatitis and did not operate. After a few days she became symptom-free and was discharged. She came back to us in February 1936 with a lower abdominal tumor which we recognized as an ovarian cyst. We then realized that the symptoms she presented five months before were due to a rupture of this cyst. She was now operated upon and a bound-down, densely adherent grade 4 adenocarcinoma found. This diagnosis was made by Dr. J. C. Henthorne. On account of her unusual postoperative improvement these slides were also studied by Dr. Paul Kimmelstiel and by the National Pathological Laboratories, and all reported adenocarcinoma. The growth had extended to the left broad ligaments and to the parietal peritoneum and the left half of the uterus; it was entirely impossible to remove all of the malignant tissue. We felt deeply remorseful that we had not operated upon her five months before when she first suffered the acute abdominal symptoms. This prompted us to use this unique form of treatment, realizing that with the usual treatment for the extensive and irremovable pathology, she would have no chance of recovery. It would have been useless to remove the uterus and right adnexa when the cancer could not be removed from the left side by any known surgical procedure. In this dilemma, we decided to place 50 milligrams of radium, well screened with two rubber tubes, and the brass capsule directly against the cancerous tissue. The intestines were walled off with vaseline and iodoform gauze and the rubber tubes brought out through the low abdominal incision. The tubes, radium and gauze were removed 24 hours later. Postoperatively she was given thorough x-ray treatment. She remains entirely well 12 years later. She first promised to come before you today but her nerve failed her. I am sure that some of the doctors in Yazoo City are acquainted with her. She was examined by me two weeks ago.

I have been able to find no record of radium having been used elsewhere, in this country, intraperitoneally for lower abdominal irremovable cancer. Dr. Masson of the Mayo Clinic wrote me that it had not been used in this manner at Rochester. It is believed that the radium contributed much to the attainment of this most unusual and unexpected good result. In the literature will be found instances where radium has been used intra-peritoneally for advanced cancer of the stomach.

3. **Mrs. E. S.**, operated upon May 21, 1942, for cancer of the left fallopian tube. Pathological diagnosis was adenocarcinoma of the left fallopian tube, metastatic adenocarcinoma of the ovary. Dr. J. C. Henthorne was the pathologist. It was found that this disease had spread to the broad ligaments and to the left parietal peritoneum so that it would have been difficult, if not impossible, to remove all the disease surgically. In this case we applied the radium intra-abdominally, as was done in the preceding case. We left in place 50 milligrams of radium, properly screened, for 24 hours. She remains well.

Carcinoma of the fallopian tube is rarely found; only 16 cases of this kind were found in 10,000 cases of carcinoma of the pelvic organs operated upon at the Mayo Clinic between the years 1910 and 1943.

4. **Mrs. J. S.**, age 51, was treated in 1923 for carcinoma of the breast. The pathology report stated: "The growth is rather solid and, apparently, of gland cell type." (R. L. Thompson, pathologist.) Following a radical amputation she remains well, at the present age of 75—25 years later.

5. **Mrs. E. W. T.**, age 50 in 1925, operated upon March 24, 1925, for carcinoma, gland cell type, carcinoma of right breast. She remains well 23 years later. Dr. R. L. Thompson, National Pathological Laboratories, reported this as an unusually malignant tumor.

6. **Mrs. J. D. H.**, age 30, operated upon October 27, 1940, for the only chorio-epithelioma found. No other chorio-epithelioma is recorded at the Baptist Hospital in the past 25 years. This diagnosis was made by Dr. J. C. Henthorne and confirmed by Dr. Fred W. Stewart, pathologist, of the Memorial Hospital. Dr. Ewing wrote, "Dr. Stewart regards this as fully developed chorio-epithelioma and advises a full cycle of deep x-ray therapy to the pelvis.

These tumors are prone to metastasize by choice to lung and liver, although widespread generalization supervenes in some cases. Lymph node involvement is ordinarily a later event than visceral metastases." They regarded this as an exceedingly malignant tumor. At operation, the uterus, appendix, and right ovary were removed. Dr. Henthorne had not been able to find a malignancy from the uterine scrapings, but did discover it in the uterus after operation; this is the reason the left ovary was not taken out. Following the operation she had an application of radium in the vault of the vagina and thorough x-ray treatment. She remains entirely well now, eight years following treatment.

7. **Mrs. H. H. Mc.**, age 20, came to me on April 4, 1938, to be examined for pregnancy. When she began to undress she discovered a slight passage of blood; she was found to be two and one half months pregnant and small papillomatous growth was discovered on the posterior lip of the cervix. A biopsy from this was reported squamous cell carcinoma, grade 4, by Dr. J. C. Henthorne. She aborted spontaneously, most conveniently, and she was then given thorough x-ray and radium treatment. She remains entirely well eight years after. The combination of extreme youth, pregnancy and grade 4 cancer would, of course, suggest an extremely bad, if not a hopeless prognosis. She was treated very early in the course of the disease and given intensive radiation, with perfect results.

8. **Mrs. J. H. B.**, who could not get here today, was treated at the age of 72 for carcinoma of the cervix uteri, the pathologic diagnosis being "carcinoma undifferentiated squamous cell type." (Dr. R. L. Thompson, National Pathological Laboratories.) She was treated in 1934, and now remains well at the age of 86, fourteen years after treatment. She was treated with radium.

9. **Mrs. D. D. Mc.**, operated upon in 1932 for sarcoma of the breast. The diagnosis was made by Dr. R. L. Thompson of the National Pathological Laboratories. This patient remains well.

10. **Mr. J. C. W.**, age 62, was found to have cancer of the larynx in 1939. He was referred to Dr. New of the Mayo Clinic. He had a laryngectomy performed by Dr. New on June 5, 1939. The pathology was found to be grade 3 squamous cell epithelioma. He remains well at this time, nine years later, and you will be interested to see how well he talks with an artificial voice box.

Dr. Harley Shands
319 E. Capitol Street
Jackson, Miss.

Dear Shands:

I am sorry I cannot put my hands on the history of the patient you refer to, who was miraculously cured of a seemingly most malignant monstrous growth by a few injections of Coley's toxins. This happened over forty years ago. Unfortunately, I have misplaced the clinical history of this patient; but I wrote Dr. Coley at the time and also gave a brief talk on him at the Memorial Hospital, New York. The facts are briefly:

A young and vigorous man of about thirty years, employed as Pullman car conductor, who lived in Canton, Miss., had been operated on by Parham in one of the private hospitals here, and had recovered perfectly. The operation had been performed for the relief and drainage of a large left perirenal abscess, and he had gone back to work apparently well. Within the space of two months, about, a hard mass developed in the scar, which apparently was a keloidal cicatrix. Within a few months his doctor (one of our Tulane graduates, whose name I cannot recall at this moment) brought him to me at the Charity Hospital on one of my Thursday dry clinics. The doctor briefly related the history of this man, which was the clinical record of a stupendous monstrous growth. When the patient walked into the amphitheater, and was stripped to his toes, his appearance remarkably suggested that a man walking inside of a tight-fitting barrel, which extended above up to the nipples in front, and the lower tip of the scapula behind, and as low as the groins below. The body enclosed between these levels had the appearance of a dense barrel-shaped pachydermal hide. This rose above the level of the skin. As if the subcutaneous connective tissue had been injected with some plastic material, which on hardening had left a thick coat resembling the diffused hard infiltration of the skin characteristic of the unbridled growth of a breast cancer *en curiasse,* in young pregnant or lactating women, after an unsuccessful mamectomy. Only a dimpled line indicated the seat of the original lumbar incision. What added more similarity to the barrel-like shape of the growth was the extraordinary thinness of the extremities, face and neck, which made some of the students comment on the "spider man," and "walking tumor" man. Probably the extraordinary contrast between the thin extremities and emaciated face and neck of the patient with his bulky barrel-like body, was due to the fact that the patient realizing the utter hopelessness of his condition, had decided to expedite the end by the easiest and most pleasant way, and had practically lived. in the last two weeks, in an alcoholic stupor, and whiskey drunk. His condition suggested that the metabolic processes in his body had all centered in the growth, and that nutrition had been arrested in the extremities. The patient suffered comparatively little pain apart from a constant oppressive sense of a constriction. No laboratory work was done, not even a biopsy as the patient insisted upon hurrying from the hospital. It was because the doctor, moved by the entreaties of the patient's mother, decided to bring him to my clinic for an opinion; and also the doctor's desire to show me this extraordinary picture, which indeed proved a veritable sensation in the amphitheater.

As to the diagnosis, nothing definite could be said except that this growth was a diffuse, rapidly spreading neoplasm, and not a purely inflammatory tumor. The appearance suggested some unknown type of malignant keloid, or a subcutaneous sarcoma. As to treatment, the mere thought of medication or therapy, apart from symptomatic, seemed absurd, also unnecessary, because of the gentle soporiferous influence of Bacchus!

At that time, we were trying Coley's toxins quite frequently in cases of inoperable cancer, and not wishing to send the patient back to his mother empty handed, I suggested the cautious use of the toxin, on arrival at home beginning with a dose of 5 minims of the liquid. (The extract of a filtered culture of the erysipelas streptococcus and bacillus prodigiosus, specially prepared by Dr. Tracy of Philadelphia expressly for Dr. Coley. (At present manufactured by Parke-Davis and Co.) The first injection given by Dr. .... was followed by a tremendous febrile reaction of over 104° and great prostration, which made the patient feel too sick to enjoy his usual alcoholic libations. Over a month passed before another injection was given, but even at this time a perceptible change in the size and hardness of the growth was noticed, which encouraged the patient's mother very much. She urged him to put drinking aside, and he began to improve so palpably that he himself began to entertain hope of recovery. Another injection of the Coley toxin was given, followed by less reaction; and after that followed an extraordinary improvement in the growth and in the patient's general condition. The tumor seemed to be melting away by absorption, and without any inflammatory signs that might be suggestive of an attack of erysipelas. The improvement was so great that when the doctor brought the patient back to me about eight months after his first visit, I could not recognize him. The tumor had completely disappeared, leaving behind a perfectly normal outline of the body. The young man was able to return to his railroad job as Pullman conductor. I lost sight of him and of any further information regarding his progress, as his doctor had passed away not many months after he brought the patient to me at the Charity Hospital.

There is no question that the tumor was a neoplasm, not an inflammatory growth, but what kind of neoplasm? No one can tell, but clinically the appearance and history suggested a rare and unique type of malignant keloid or some form of diffuse subcutaneous sarcoma. What made it disappear, and cure the patient? The simplest answer is that the cure was a miracle, and that the Lord in pity had heard the prayers of the anguished mother—which I certainly would not question, except for the fact that the miracle only happened after the patient had been injected with the Coley toxin.

The story of cancer and of its miraculous cures goes very far back into a remote antiquity, but as we are advancing in the twentieth century, these miracles are becoming less frequent. About 25 years ago I was on a committee with Dr. Dean Lewis of John Hopkins, charged with the function of determining the winner of a $50,000 prize, offered by a generous philanthropist, as an award for anyone who had found a positive cure for cancer. We spent nearly a year going over more than 10,000 claims for this prize, but we were forced ultimately to report that we had found no justification for the award in any case. And now our committee, even if revived, could scarcely make a much better report.

If you are still in time for your address I would suggest writing to Dr. Bradley L. Coley, 140 E. 54th Street, New York City, New York, who is associated with the Memorial Hospital in New York, and associate editor of the American Journal of Surgery. He and his sister are distinguished workers in the field of cancer having inherited all their father's knowledge of the subject. I am sure Dr. Coley could give you a great mass of information regarding the many cases of cure by the use of Coley's toxins. Dr. Gessner and I collected a considerable number of cases of cancer in which we used the toxins, and we had records of some patients who had improved; but no case that could approach in its dramatic effect that of the young man from Canton, which I have just outlined.

Congratulations on your presidency of the Surgical Section of the M.S.M.A., and my regret that I cannot be in Jackson to listen to you. I am always

Yours affectionately,

R. Matas

Dr. Rudolph Matas
2255 St. Charles Street
New Orleans, Louisiana

Dear Doctor Matas:

I am deeply grateful to you for your letter of April 28. It sounds just as natural as it could be—just as you talked 43 years ago. Everything you said at that time and your letter now, is an inspiration to me. Old Father Time should pass entirely over you as he has apparently partly passed over you. You are almost one of the immortals and should never leave this terrestrial ball until all your friends have preceded you.

I plan at this time, after I have finished my talk, to hold the audience a little while to read your delightful letter and to report a similar case which I had where a marvelous cure followed the use of Coley's toxin. I will give you a brief description of this case:

The man whom I treated was Mr. George Nelson, 64 years of age, of Hazelhurst, Mississippi. I was called to see him about 1916, by Dr. E. H. Deberry. He had had for a number of months a rapidly growing solid tumor in the left testicle; it was as large as a quart pitcher and he was apparently very sick, having had hiccoughs for the past week. The tumor was patently solid but I went so far as to make two punctures with the trocar into the tumor, hoping to find a deep-seated hydrocele. This was a solid tumor and, of course, we knew that 97 per cent of solid tumors of the testicle are malignant.

Following your instructions and suggestion, we were at that time using Coley's toxin in the treatment of inoperable cancers, so when I came out in the hall from the sick room and talked with the patient's wife, I explained to her that he was certainly going to die and that we might try (if only as a placebo) the Coley's toxin, which I would send to Dr. DeBerry the next day.

The patient's condition was so serious that they called for his son to come home from Oklahoma to be married before his father died. The son did come home and was married two days later. The family made preparations for the patient's death. Dr. DeBerry started giving Coley's toxin, at first in his arm; he would get a sharp febrile reaction from this. He gave him injections there every few days at first and then gave injections directly into the tumor, each time followed by high fever. Within two or three months the tumor had almost disappeared, being no larger than a small lemon and Mr. Nelson was, to all intents and purposes, well. He lived four years longer and died of a punoiec.

Mr. Nelson had a large plantation and when he was able to be back to his farm he said to his laborers, "O, yes, you Negroes thought I was going to die—but here I am." I tried to get him to let us remove the testicle after he had made such improvement, but he would never do it so the exact diagnosis remains unsettled. I can assure you, however, that this is a true statement of what happened following the use of Coley's toxin, I can further state that this is the only case that we had in which the toxin seemed to do any good.

I am deeply grateful to you for taking the time to write this to me.

Your friend and ever admiring former student,

H. R. Shands, M.D.

The Pathological Aspects of Carcinoma of the Cervix*

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Depart of Pathology
University of Tennessee

THE certified diagnosis of carcinoma of the cervix requires biopsy and pathological examination. There is good recognition on the part of the practitioner of the possibility of cancer in erosive, bleeding, indurated, proliferative or leukoplakia lesions. This knowledge has made the problem more difficult for the pathologist inasmuch as lesions very early in their development are submitted for examination. That is all to the good. In time, when we learn to recognize with certainty the precursors to cancers (the precancerous stages) we may be able to make a really significant reduction in cancer mortality. Today we are certain only that leukoplakia in any of its forms is precancerous in the cervix. Its recognition implies removal. If irritants are suspected of producing the lesions they must be eradicated as well. Leukoplakia is essentially an hyperplastic overgrowth of the stratified squamous epithelium of the cervical lips. It may approach the disorderly overgrowth of cancer and at that time deserves either one of two designations; namely, leukoplakia with dyskeratosis, or cancer in situ. The first is a descriptive name of the lesion as it exists, the latter designation implies that the examiner is certain that the lesion will progress to the frankly invasive phase. The indications for treatment are still those for leukoplakia—the lesion must be removed in its entirety preferably by sharp dissection.

Not all epithelial overgrowths are necessarily precancerous. Squamous metaplasia is the overgrowth of the more primitive type of lining on the more differentiated columnar epithelium of the endocervix. Microscopically, it may mimic invasive squamous carcinoma but the experienced pathologist is well aware of this potentially confusing picture. Papillomas of the vaginal canal and the cervical lips are not premalignant either.

Glandular enlargements of the Nabothian system in the endocervix may produce sufficient swelling to resemble a sessile polyp grossly. Microscopically they are easily distinguished from the true tumors of this site, the adenoma, or adenomatous polyp. The simple dilatations of glands are post-inflammatory, blockage phenomena; the adenomas are benign tumors which may be premalignant. They may show "histological malignancy" characterized by cancerous (adenocarcinomatous) transformation of a portion of the structure, or frankly invasive carcinoma of still another part. It is best for diagnosis to take the lesion along with its base. In cases where the pathological findings are "histological malignancy" it is doubly important to decide whether or not invasion has occurred.

Frankly malignant tumors of the cervix are for the most part those of the anterior lips and are squamous (epidermoid) carcinomas. About one out of ten malignancies proves to be an adenocarcinoma of the endocervical canal. Squamous carcinomas are customarily divided into four clinical groups and four groups based on their microscopic characteristics. These two classifications do not necessarily overlap or match. The **clinical grading** is based on the palpable measure of the degree of invasion that has occurred from superficial invasion (clinical grade one) to such massive involvement as to make immobile the cervix on its surrounding structure (clinical grade four). The **microscopic grading** of tumors depends on their resemblance to adult stratified squamous mucosa. Those that resemble it closely are grade one, and those that have departed so far from that appearance as to resemble primitive embryonic tissue are grade four. This general type of tissue classification is applied to adenocarcinomas as well. When proposed originally by Broders there was the expectation that such microscopic criteria would serve as a prognostic index. It has not worked that way in practice for the following reasons:

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*Read before the Alcorn County Medical Society, Corinth, Miss., April 26, 1948.

1) A biopsy may not be representative of the whole. For example the biopsy may show a grade two squamous carcinoma which may compare with a predominantly grade four carcinoma when the entire specimen becomes available for study. 2) The degree of extension of the cancer, i.e., its clinical grade, frequently is of greater prognostic importance than its histological group. For example, a histological grade four carcinoma limited to the superficial portions of the cervix can be eradicated more successfully by excision than a histological grade two carcinoma that has extended to involve the pelvic structures, the regional lymph nodes, and reached distant organs.

It appears more logical to use our clinical and histological data in a slightly different way. After making allowances for the individual differences in response to irradiation it is still true in most instances that the less differentiated the tumor the more radiosensitive it is likely to be. The futility of expecting good results in grade one carcinomas by radiation alone is borne out by experience. We have learned in such instances that the radiation dosage necessary to affect cure approaches that which will cause necrosis of viable normal tissue around it. Even in the best of hands excessive dosage of radiation will not only kill the cancer but sacrifice a certain amount of normal tissue as well. The most serious hazard of that type is in the production of fibrosis of the ureter caught in the crossfire pattern of radiation. That complication may mean eventual death from renal failure following hydronephrosis. A knowledge of the microscopic nature of the lesion and the clinical grade can and must serve as the rational basis whether to employ radiation or surgery, or both. Practically, the treatment must be individualized as well for best therapeutic results.

A biopsy must be adequate to insure an accurate diagnosis. We have reached a high degree of proficiency in the microscopic diagnosis of cancer. There are few procedures in the whole of medicine which approach the accuracy of biopsy diagnosis. Frequently it is accepted as the standard against which all procedures short of biopsy are evaluated. The following guide is (frequently) enough to insure good biopsy tissue:

1. Select the area for biopsy carefully by inspection and palpation. Use magnification wherever necessary or routinely.

2. Cut out the block with a sharp knife and use as little crushing action of the forceps as possible. The electric cautery for conization may well follow biopsy but must not be used as a substitute. Coagulated tissues or those showing crushing artefact may be impossible to interpret under the microscope and thereby delay diagnosis for weeks or even months.

3. Biting forceps may be the instrument of choice if used carefully but are likely to be unsuccessful in securing a good block of tissue when the surfaces are flat and indurated; and more likely to be successful when the lesion is a fungating, friable large mass.

4. Tissues undergo autolysis quickly in warm weather. Immediate fixation in one part of commercial formalin and nine parts of top water solution is adequate always. If the block is small orient the tissue by placing the cut surface on a piece of dry paper toweling and put both in the bottle of fixative immediately.

5. Pathological interpretation requires adequate clinical information. The exact size of the lesion, its duration, its mode of onset, the present appearance, the presence or absence of associated disease, the presence or absence of pregnancy as well as the age of the patient is the minimum information to be submitted with each specimen.

Advances in diagnostic procedures are being made every year. We may live to see the serological diagnosis of cancer, and other refinements not yet suspected. For almost as old as cellular pathology itself those interested in the microscopic diagnosis of cancer have been looking at the individual cells sloughed from a malignant growth into body fluids, secretions, or exudates. The most recent development along these lines is that of Papanicolaou's cytological staining methods applied to the diagnosis chiefly of cervical cancer. In the present state of our knowledge one cannot see completely all the limitations and indications of the method. It may prove to be useful in surgically inaccessible cancer. In the best of hands the method is not as precise diagnostically as well taken tissue adequately studied microscopically. For those clinics that see large numbers of patients every day the cytological method may prove to be a time-consuming but perhaps justifiable screening method selecting for biopsy those with obscure cervical lesions. For the practitioner not faced with the problem of numbers there may not be much value in using any procedure other than biopsy. In the last analysis the wholehearted coöperation of practitioners, pathologists, surgeons and radiologists is necessary for the prompt diagnosis and adequate treatment of any cancer. What has been presented above is an attempt on the part of a pathologist to define briefly what is implied in the microscopic diagnosis of cancer. I believe it is true now and will be true for some time to come that decrease in cancer mortality in a given community will be in direct ratio to the frequency with which the practitioner suspects cancer and does something about it.

Manifest Refraction*

ARTHUR V. HAYS, M. D.
Gulfport, Miss.

THE understanding of two basic matters is essential in this method of refraction.

1. **Accomodation is a reflex act.** The sensory stimulus is the image on the retina. If the eye can improve that image so as to see better, it will do so automatically. It will not act to make vision worse. Accommodation can act in two ways but not in three. (1) It can make the crystalline lens more convex by contraction of the ciliary muscle equivalent to adding plus lenses. (2) It can make the lens less convex by relaxation of the ciliary muscle equivalent to removing plus lenses.

Accommodation does not result in unequal contraction of the ciliary muscle so as to cause or purposefully to correct astigmatism under ordinary conditions.

Understanding how accommodation acts and its reflex automatic nature make it possible to avoid many errors in measuring the refraction.

2. **The focal interval or conoid of Sturn.** Except for aberrations, the image of a point by a convex lens is a point. A convex lens combined with a cylinder produces two lines as the images of a point—the anterior focal line and the posterior focal line which are at right angles to each other. Between them about halfway is the interfocal circle.

If the focal interval is behind the retina, the eye by accommodating can move it forward and place any desired part on the retina provided it is young enough to have the necessary vision.

If the focal interval is in front of the retina, active accommodation will only move it farther in front. By relaxing the accommodation (when that is possible) the interval can be moved back. When the astigmatism is small, the eye prefers the interfocal circle for the image on the retina.

When an eye with astigmatism looks at the No. 1 astigmatic dial (a chart with 36 spokes 10 apart in the form of a wheel), the image on the retina and, therefore, the appearance of the dial depends on what part of the focal interval falls on the retina. If it is the anterior line, then the lines on the chart parallel to this focal line will be clear-cut and black, all others more or less blurred, depending on the magnitude of the astigmatism. When the posterior focal line falls on the retina, the lines at right angles to those which were clear in the first instance will now be clear and the others blurred.

When the retina is not exactly at either the anterior or the posterior focal line, but near one or the other, the lines of the dial which are near the direction of the nearest focal line will be less blurred than the other lines. The contrast will not be so marked as when one of the focal lines is exactly on the retina. When the interfocal circle is on the retina, then the lines on the chart will all look alike but will be slightly blurred.

When the focal interval is behind the retina, accommodation can move it forward and will do so and produce uncertain and variable results making it impossible to measure the astigmatism. When the focal interval is in front of the retina, as it is when plus spherical lenses of suitable strength are placed before the eye in the trial frame, the accommodation is helpless. Active accommodation will only make things more blurred, as if more plus spherical lenses were added. If the accommodation relaxes, that helps until a plus lens strong enough is placed before the eye to take all of the power for relaxation. This is the simple but effective principle on which fogging is based. Skillfully applied, it is more effective than cycloplegia as ordinarily used.

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*Read before the Section on Eye, Ear, Nose and Throat at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

The ideal fogging is the lens equal to the sum of the plus sphere and the plus cylinder which would correct exactly the refraction. Since this is not known at this stage it is necessary to guess. The guess is based on the old prescriptions, the opthalmoscopic examination (which estimates refraction) or the retinoscopic examination. In the absence of these clues, it would be necessary to start with a fairly strong convex lens and reduce by degrees until the patient can read 20/30, or, if the astigmatism is thought to be rather large, 20/40. Later the findings will be rechecked with a more exact fogging.

The left eye is occluded with an opaque disc. The fogging of the right eye is checked and corrected if necessary. The patient is told to look at the No. 1 dial and tell whether the lines look all alike or some darker, more distinct than others. If he says, "all alike, no difference," there are two possibilities; either they are all alike on his retina or there is a difference which he does not detect.

To settle this question, place a -.50 cylinder in the frame axis 90. Ask if they are not still all alike. If they are, it may be that the -.50 axis 90 reduces an existing astigmatism and makes them alike. Rotate the cylinder to axis 180, and now it will increase any astigmatism which before it helped. If he still fails to detect a difference, tell him what he should see —this way, vertical line darker; that way, horizontal lines darker. Perhaps he will detect it more easily on the No. 2 chart with only 2 lines at right angles to each other. If still negative, try -1.00 cylinder the same way. If still no response, this test is not suitable for this patient. But be sure you are fogging correctly. If he fails to detect the affect of a -1.00 cylinder try the affect of a -1 sphere. This will positively improve the vision 2 or more (usually more) lines. If it does not he is **not fogged** and the fault is yours not his that he failed to detect the astigmatic affect on the chart.

There are two pitfalls to be guarded against. One is that the vision may be so low that a -.50 cylinder is not detectable. The other is that too great fogging will make everything so blurred, the patient sees no difference. A patient whose vision is normal will, if fogged to 20/30, always detect a -.50 cylinder unless he is hopelessly dumb and impossible for a subjective test.

When the patient does detect a difference in the lines with only a sphere in the trial frame, it is necessary to locate exactly the center of the group of clearer lines. On the No. 1 chart and with a rather large, easily seen pointer, say a large paper cutter, point to the lines, asking, "Is this one of the clearer, darker lines?" If he says yes, ask how many to the right or above are fairly good and black, then how many to the left or below. Move the pointer to that that seems to be the middle line of the group, or it may be to a space between two lines which is the center of the group. Ask again. Observe carefully the patient's head, since a slight tilting of the head will change the angle of clearest lines on the chart.

Set the No. 2 dial with one line at the axis found. Ask which line is more distinct. Now place minus cylinders, one after another in the trial frame (or hold them in the hand) with the axis corresponding to the axis of the dim or blurred line on the cross. This will make that line clearer, less fogged, because it is a minus lens. When they are both alike, the astigmatism is corrected.

Check the fogging. This is done by holding a -.50 sphere before the eye. This will clear up the fogging enough to make the patient read two more lines. Holding a +.50 sphere before should reduce the vision two lines on the average.

The amount of astigmatism is now known. Measure the other eye the same way. Next determine the spherical component.. Do both eyes together as this conduces to decidedly better relaxation of the accommodation. With an approximate correction composed of the cylinder sphere, preferably slightly fogged, such as was used on each eye separately, ask the patient to read the letters. See if -.25 sphere held before both eyes at once enables him to read another line. Then try each eye alone by holding a cover over the other eye. When the maximum for each eye is obtained, test the **balancing** of the two eyes to see if each is accommodating the same. To do this:

Hold +.50 sphere before both eyes and have the patient read the smallest he can. This should fog him two lines. Then try each eye along with the other covered. One eye may have better vision than the other anyway. However, **each should be reduced two lines** by the +.50, e.g. O.D. reads 20/15, on adding +.50 equals 20/25; O.S. reads 20/20 on adding +.50 equals 20/30. They appear to be balanced. Try -.25 O.D. then O.S. Each should be pronounced clearer, but the patient **should not read any more.**

The distinguishing feature of this method of refraction is the Lancaster—Regan astigmatic charts No. 1 and 2. The usual type of dial as seen on the projector screens and posteriorly illuminated charts are not suitable.

Personally I have used this method for several years. As with other methods it has its faults but I am satisfied in using it.

MERRY CHRISTMAS
1948
USA

FIGHT TB
Buy Christmas Seals

It has been recognized for many years that the prevalence of tuberculosis among mentally ill patients is exceedingly high.

The serious potentialities of mineral incipient lesions of the pulmonary tuberculosis indicate the need for both careful therapeutic management and extended follow-up observation of such cases.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

You will note the program of the Mid-South Postgraduate Medical Assembly. In February we should have one of our best meetings. The purpose of this assembly is to bring to the busy practitioner and specialist the very last and best in medicine by the best men in the nation in the form of a review covering four days and nights. You can ill afford to miss this assembly.

Surely there was no mistake made when Dr. Buck Presley of Due West, South Carolina, was selected as the outstanding practitioner of the year at the mid-winter session of the American Medical Association at St. Louis the
of the month. Doctor Presley, a
practitioner, is the embodimen
medicine in both heart a
in his practice the bes
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In Mississippi we have a per capita distribution of funds for the indigent sick. This enables every indigent person in the state to have hospital service if his condition is acute and urgent. The hospital takes care of the patient and is reimbursed by the state, while the doctor does his work without charge. This system of service has saved many lives, it has enabled many small hospitals to survive when times were hard. It helps them now because each hospital is duty bound to take care of a sick person rather than turn him out to die. Under this plan doctors have donated thousands of dollars' worth of service. The patient is free to select the doctor and the hospital he wants. It serves our state well against regimentation in medicine. The legislature began by paying the hospital $2.50 per day per patient, then increased it to $3.00 and now to $4.00 per day with fees added for operating room. With the high prices we now have further increase in price per day seems again necessary. This investment on the part of our state has served a great humanitarian purpose and along with our fine public health service, has been a great power against regimentation in medicine. These services should be appreciated by hospitals, doctors, and the people. If one indigent person in the state deserves to have his hospital bill paid in an emergency sickness,
every indigent in the state has a right
same aid.

DR. W. A. EVANS

A mighty oak in the forest of our
profession has fallen. Dr. W. A. Ev
Aberdeen has passed to his reward. M
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land, and his mind followed the truth like a needle to the point.

Dr. Evans practiced medicine more than sixty years. As a member of the Fifty-Year Club in Illinois he suggested the organization of such a club in our state. He was president of the Mississippi Fifty-Year Club at the time of his death. Since our state meeting last May he had given almost all of his time to searching out and seeing that the doctors of our state who are eligible be honored with certificates and public acknowledgement. It is amazing to know that one man could have so much accurate information at the end of his tongue as did Dr. Evans. To converse with him was to take a graduate course in the affairs of the world. His life and work had been a great inspiration to many people. His frequent public addresses were always appropriate and provocative of thought. It was the very greatest privilege to know him as a friend. We feel keenly this loss. We are so grateful to have known him and touched shoulders with the Evans family. They are great citizens; they are really contributors to the good of humanity and to the onward march of our civilization. Eternal peace and rest to the master mind and the noble soul of Dr. V. A. Evans.

SOCIALIZED MEDICINE

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sure. But our people with the best medical service in the world may have some room for complaint. Our distribution of medical service is not good and people have been oversold on superspecialization even as important as is specialization. We are short of doctors and nurses even if we do not have more than other countries. We also have more automobiles than the rest of the world and they cripple multiplied millions, giving work for many doctors. The grass roots of our medical problems are not so obvious in the big cities as they are out in the rural communities and the small town, many of which don't have hard surface streets. Our real needs are a few more medical schools, more doctors and nurses with professional minds, medical souls and missionary hearts, and most urgent of all, better distribution of doctors and nurses and a system of small hospitals which will aid in carrying the best in medical service to all the people. We must have medical grants locally controlled and we must have more and better public health service if we are to combat regimentation in medicine successfully. Service in the medical profession must be the measure of greatness. The kind spirit of medicine must be carried along with the science of medicine. The Golden Rule must be practiced in medicine. Political medicine, regimentation in medicine, the breaking of the patient-doctor relationship, the lack of reward for personal effort, will lower medical service to the people and it will kill the soul of medicine. We in the professional ranks must do our full duty every way possible in order that free medicine may live and that our people may be better served. We are so glad that every representative and every senator in our national Congress from Mississippi is opposed to regimentation in medicine. More power to them.

Another tall tree in the forest of distinguished medical men fell when Dr. L. L. McDougal, Sr., died. He had long been active and effective in his efforts to promote the interests of organized medicine in our state. I want to try to express the high regard in which Dr. McDougal was held by the doctors
e fortunate to know him. I also want
illiant son to emulate his dis-
course, both in life and
o realize that so many
iends are nearing
fulness. But

we are mortal and such is life. But it is with great regret and deep sorrow that we submit to the going of our friend.

(Dr.) G. S. Bryan

FOR SALE — Full office equipment of general practitioner including desk, chairs, all instruments and equipment. Price $600.00 Can be seen by phoning Mrs. Bennie Comenge, 295, Covington Louisiana.

News and Comment

Two interesting, deluxe post-convention trips have been organized for those members of the American Medical Association who are planning to attend the convention in Atlantic City, June 6-10, 1949. The AMA Special Tour Train will leave Atlantic City on Friday, June 10, for sightseeing and shopping in New York City, Montreal, and Quebec, and will arrive in Chicago Saturday morning, June 18. The AMA Air Cruise from New York to Bermuda is flexible. Departure dates are June 10, 11, or 12. Stay on the Island of Bermuda is four, five, or six days. Reservations and deposits should be made direct to International Travel Service, Inc., Palmer House, Chicago 3, Ill.

COUNCILOR OF S.M.A.

Dr. G. Lamar Arrington of Meridian, Miss., was recently elected a five-year term on the council of the Southern Medical Association. Dr. Arrington is a native Mississippian, received his B. S. degree from Ole Miss in 1923, his M.D. from Tulane in 1925, after which he intermed at Touro Infirmary, the South Mississippi Charity, and St. Louis Children's Hospital. He was superintendent of Matty Hersee Hospital from 1932 to 1939. He served as councilor from his district for eight years in the Mississippi State Medical Association.

Active in his state in organized medicine, Dr. Arringston is also a fellow in the American Academy of Pediatrics, and a fellow in the American College of Physicians.

He will serve well in his new post with the S.M.A.

If you have ever tried to make out the hieroglyphics on a doctor's prescription you will appreciate this story: "A doctor wrote out a prescription in the usual legible manner. The patient used it for two years as a railroad pass. Twice it got him into Radio City Music Hall and once into Ebbets Field. It came in handy as a letter from his employer to the cashier to increase his salary. And to cap the climax, his wife used it as a recipe for Creole Gumbo and his daughter played it on the piano and won a scholarship to a Music Conservatory."

A hospital would not think of failing to provide a patient with a routine urinalysis and yet it is stated that only four-tenths of one per cent of cases of diabetes are discovered by providing a routine x-ray. It is also said that less than one percent of patients provided a routine blood count have a blood dyscarsia. Less syphilis is found by providing routine Wassermanns than significant tuberculosis by providing a routine chest x-ray. Allen Filek, M.D. NTA Trans., 1947.

ANNOUNCEMENT

Rush Brothers Clinic announces the association of James A. Lauderdale, M. D., practice limited to diseases of infants and children. Offices: Rush Memorial Hospital, Meridian, Mississippi.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY POST-CLINICAL TOUR TO MEXICO

The New Orleans Graduate Medical Assembly is sponsoring an interesting post-clinical tour to Mexico, planned to follow the 1949 assembly meeting. On Saturday, March 12, a party composed of doctors and their wives will leave by Pan-American Clipper for Mexico City and headquarters will be at the new and beautiful Hotel Del Prado.

A medical program has been arranged for the group in Mexico City and the itinerary includes visits to Cuernavaca, Taxco, Puebla, Fortin, Oaxaca, Orizaba and other points too numerous to mention.

Departure from New Orleans will be on Saturday, March 12, and the group will return on Sunday, March 27.

Details and a complete itinerary are available at the office of the Assembly, Room 105, 1430 Tulane Avenue, New Orleans 12, Louisiana.

LIST OF EXHIBITORS—MID-SOUTH POST-GRADUATE MEDICAL ASSEMBLY

Abbott Laboratories, North Chicago, Illinois.
Ames Company, Inc., Elkhart, Indiana.
Bilhuber-Knoll Corporation, Orange, New Jersey.

Burroughs Wellcome & Co. (U. S. A.) Inc., New York, N. Y.

Cameron Heartometer Company, Chicago, Illinois.

Cameron Surgical Specialty Company, Chicago, Illinois.

Carnation Company, Milwaukee, Wisconsin.

G. W. Carnrick Company, Newark, New Jersey.

Ciba Pharmaceutical Products, Inc., Summit, New Jersey.

Davis & Geck, Inc., Brooklyn, New York.

The Dick X-Ray Company, Memphis, Tennessee.

Fillauer Surgical Supplies, Chattanooga, Tennessee.

Fillauer Surgical & Company, Chicago, Illinois.

General Electric X-Ray Corporation, Memphis, Tennessee.

Gerber Products Company, Fremont, Michigan.

Holland-Rantos Company, Inc., New York, New York.

Kay Surgical, Inc., Memphis, Tennessee.

Lederle Laboratories Division, American Cyanamid Company, New York, New York.

J. B. Lippincott Company, Philadelphia, Pa.

Maico of Memphis, Memphis, Tennessee.

J. A. Majors Company, New Orleans, Louisiana.

Mead Johnson and Company, Evansville, Indiana.

The Mennen Company, Newark, New Jersey.

E. L. Mercere, Inc., Memphis, Tennessee.

Merck and Co., Inc., Rahway, New Jersey.

The Wm. S. Merrell Company, Cincinnati, Ohio.

Mid-South Oxygen Company, Memphis, Tennessee.

Philip Morris and Co. Ltd., Inc., New York, N. Y.

Parke, Davis and Company, Detroit, Michigan.

Pet Milk Sales Corporation, St. Louis, Missouri.

Puritan Compressed Gas Corporation, Kansas City, Mo.

Richards Manufacturing Company, Memphis, Tennessee.

Sandoz Chemical Works, Inc., New York, New York.

Schering Corporation, Bloomfield, New Jersey.

G. D. Searle and Company, Chicago, Illinois.

Sharp and Dohme, Inc., Philadelphia, Pa.

Sherman Laboratories, Detroit, Michigan.

Southern Surgical Supply Company, Memphis, Tennessee.

E. R. Squibb and Sons, New York, New York.

Wm. T. Stover Co., Inc., Little Rock, Ark.

Union Hospital Supply Company, Memphis, Tennessee.

U. S. Vitamin Corporation, New York, New York.

White Laboratories, Inc., Newark, New Jersey.

Winthrop-Stearns Inc., New York. N. Y.

DEATHS

(Died Nov. 8, 1948)

DR. GUS EVANS

Dr. Evans was of distinguished ancestry. His grandfather, William G. Evans, was born in Wilkes County, Georgia, brought his family to Monroe County in 1836, just after the treaty of Dancing Rabbit had ceded the prairie lands of Monroe County from the Chickasaw Indians to the U. S. Government. Wm. G. Evans bought a section of raw prairie land, near the present village of Prairie, Miss.. about 10 miles west of Aberdeen. He made it into one of the most productive farms in the prairie country.

Dr. Evans' father was Dr. W. A. Evans, Sr., and born in Wilkes County, Ga., shortly before the family moved to Monroe County, Miss. The first Dr. Evans graduated in the Medical Department of the University of Mississippi, just before the Civil War. The original Dr. W. A. Evans (father of the subject of this sketch) enlisted in the Confederate Army, 11th Miss. Regiment, Van Dorn Reserves. He was later assigned to the Medical Corps of the Confederate Army, as a surgeon. He was later placed in charge of a Confederate hospital at Marion, Ala., and he also served in similar capacity at Lauderdale Springs, Miss. While stationed at Marion, Ala., Dr. Evans married Miss Julia Josephine Wyatt, of that city, the wedding taking place at Siloam Baptist Church, Marion, Ala., in May 1864, the bride being a daughter of William N. Wyatt, a family prominent in Alabama history. This particular Wyatt was chairman of the board of trustees of Judson Female College and of Howard College, Baptist educational institutions which are still in operation. At the close of the Civil War. Dr. Evans returned to Aberdeen, where he practiced medicine for 38 years.

Dr. W. A. Evans had an uncle, also, who practiced medicine in Aberdeen, Dr. F. H. Evans. He was also a surgeon in the Confederate Army, and was in charge of a Confederate hospital at Dalton, Ga. He later moved to Oxford, Miss.

Another brother of Dr. Evans's father was Capt. J. J. Evans. He enlisted in the Van Dorn Reserves as a private. He rose to the rank of captain, and at the close of the Civil War, was an adjutant on the staff of Gen. Joe Davis, who was an older brother of Jefferson Davis. His command surrendered at Appomattox. At the close of the war, J. J. Evans returned to Monroe County, and took charge of his father's plantation near Prairie, Miss. He was later elected Chancery Clerk of Monroe County, and later served as state treasurer of Mississippi, and was also president of the State Railroad Commission.

After graduation from the A. & M. College, Dr. Evans studied medicine in the Medical School of Tulane University, New Orleans, graduating in 1885. He came back to Aberdeen, and began practice of medicine here. He was vice-president of the Mississippi State Medical Society in 1889. His first public health work was in connection with a yellow fever epidemic in 1888. Dr. Evans was placed in charge of a receiving and examining station at the Mississippi-Alabama Line, near Gattman, Miss.

Dr. Evans went to Chicago from Aberdeen in 1891, to become Professor of Pathology at the Medical Department of the University of Illinois, this branch of the University being at Chicago. He remained in this position until 1908, when he became Professor of Public Health in Northwestern University. He remained in that position until he became Professor Emeritus in 1928. Dr. Evans was president of the Chicago Medical Society in 1903. He became Health Commissioner of the city of Chicago in 1907, and worked for a number of health reforms, such as a better milk supply, more sanitary conditions, better water supply, and the famous Chicago drainage canal. He served in this capacity for more than 20 years.

He was president of the American Public Health Association in 1916.

Along with professional honors, Dr. Evans has achieved distinction in other lines. As a young man, he was captain of the old "Aberdeen Guards," similar to the present National Guards organization, and won a silver cup in a competitive drill at Greenville, Miss., in 1885. It was for the "best drilled soldier in the state." Later he was a major in the 1st Illinois Cavalry.

Dr. Evans is the author of a number of books, both professional and historical. Author of *Notes on Pathology, Life of Mrs. Abraham Lincoln, Yearbook of Pathology, Yearbook of Public Health.*

He is a retired honorary member of the Illinois Medical Society (50 years practice of medicine.) He is also a retired honorary life member of the Chicago Rotary Club.

Since returning to Aberdeen, Dr. Evans has devoted his time to travel, and to historical research, particularly to local Monroe County history, since which time he has written:

Mother Monroe, which ran weekly in the Aberdeen Examiner for one year; *Who's Who in the Cemeteries* which ran weekly in the *Examiner* for one year. Other articles which appeared in the *Examiner* were:

Advertisement of Aberdeen Land Auction (Auction) in 1836, *Steamboats on the Tombigbee River to Aberdeen, Popular Vote of Monroe County for President,* 1824, to 1860, *A Thanksgiving Day Proclamation in 1820,* and the following articles which have appeared or will appear in the *Mississippi Journal of History, Route of Gaines' Trace in Monroe County, Roster of All Graves and Cemeteries in Monroe County, Boundaries of Monroe County under Differene State Laws, Presidential Politics in Monroe County, 1824 to 1860, DeSoto's Route Across Monroe County, Stage Routes and Inns in Monroe County, A Group of Early Characters in Pioneer Monroe County, Monroe County Historians, The Trail of Tishomingo, Steamboats on the Upper Tombigbee, Health and Doctors in Monroe County, Markers in Monroe County, Bienville's Route Across Monroe County, Source Material in the Evans Memorial Library.*

Articles which Dr. Evans wrote, and appearing in the Oklahoma *Chronicles of History*:

The Sale of Chickasaw Lands in Monroe County; How Much was Paid for Them; Who Got the Money; What Became of It, and What Happened to the Lands.

He has also written a series of articles for *Chase* Magazine, dealing with noted fox-hunters and hounds in this territory, as follows:

A History of Fox-Hound Field Trials, Four Packs of Fox Hounds in Early Monroe, Recreation of the Waverly Pack After the Civil War.

For the Memphis *Commercial-Appeal,* he has written feature articles for the Sunday paper, as follows: *History of the Original Major S. A. Jonas' Poem, Lines on the Back of a Confederate Bill.*

In addition, he has collected the originals of Maj. Jonas' poems, and placed them in the State Department of Archives and History.

Dr. Evans has collected a series of letters written by a pioneer citizen of Monroe County, detailing events and men of that era, known as "The Wilkes Letters" and these have been reprinted in the *Aberdeen Examiner.*

Dr. Evans has made various contributions to medical literature, which have appeared in national and state medical journals. He is co-author with Mrs. J. O. Wynn in publication of *Travel Diary of W. N. Wyatt.*

Dr. Evans was married to Miss Ida May Smith, of Bolivar, Tenn., in 1907. She died in 1926. There were no children.

TRIBUTE

Dr. Gus Evans is no more on this earth. His beloved Aberdeen, Monroe County, Mississippi, and really, the entire country, are poorer. Doctor Gus will be truly mourned as a great loss to the medical and public health world and to society in general.

He was my good friend and constant adviser from the time I entered the field of public health. I had known and greatly admired him during my medical student days and the years I devoted to the practice of medicine. During the 1927 disastrous Mississippi River flood, during the 1937 epidemic of infantile paralysis in Mississippi, and on numerous other occasions when public health responsibility bore heavily on me and my associates, Doctor Evans was always at hand not only with invaluable advice, but with his coat off and his sleeves rolled up to help meet the urgent public health problems at hand. Doctor Evans and Dr. Herman Bundensen, the Health Commissioner of the City of Chicago, were of great assistance to us during the 1927 Mississippi River flood which created diverse and urgent public health problems. Doctor Evans brought Doctor Bundensen to Mississippi and they spent several days in hip boots in the Mississippi Delta. No man ever took more interest in helping me meet the responsibilities of a State Health Officer, to help develop a progressive public health program in Mississippi for the benefit of all the citizens of the state, and one to which all Mississippi people can point with pride, than this man, Dr. William Augustus Evans, who died in his Monroe County home on November 8, after a most fruitful life, a life that will read like a romance when it is finally written.

Doctor Evans was this country's favorite medical and public health man, known and appreciated for his genuine worth throughout the country and abroad. Of all the men who have figured in the medical and public health life of not only Mississippi and Illinois, but the entire country, no one in my judgment has been more versatile and more devoted to the cause of public health than Doctor Evans. Possessing the higher kind of talent that is fitly entitled to be called genius, he adorned and dignified every position that he held. In the practice of medicine, in the laboratory, in the editorial chair of the *Chicago Tribune*, as Chicago's Health Commissioner, and on the floor of medical societies and on the hustings and the platform in the cause of good government, and in bringing to his friends the lives and history of citizens, statesmen, physicians and historic facts, not just legends, about the Chickasaw and Choctaw Indian tribes, he never failed to command a respectful hearing, and no one ever grew tired of hearing him talk or lecture. It was always interesting and usually spellbinding.

He was studious, painstaking, and untiring in his effort to make useful and truthful contributions to the history of the past and present.

I only recently read his address which he gave several years ago before the State Medical Association of Mississippi in session at Jackson on the "Illness of Jefferson Davis and the Physicians Who Attended Him." Judge W. D. Anderson of Jackson, formerly of Tupelo, recently retired from the Supreme Bench of the State, was in my office this week, and we looked it over together and the Judge remembered some of the instances recited in this great address by this outstanding physician and orator on the Life, the Diseases, and the Doctors of the President of the Confederate States of America. Judge Anderson's grandfather, Dr. J. M. Dozier, of Pontotoc County, treated President Davis in one of his most serious illnesses. I was struck with the many details brought out by this master of details and research.

It will be a long, long time before we shall see his like again. As the years go by, men will still be telling to their children and to one another the story of his great and useful life. As I write these words my heart grows tender at the memory of my dead friend who never espoused a cause in which he did not believe and never met an opponent of whom he was afraid.

Felix J. Underwood, M. D.

DR. LUTHER L. McDOUGAL, SR.

Dr. Luther Love McDougal, Sr., closed his earthly office at 1:10 p.m. Nov. 19, succumbing to leukemia and a kidney infection from which he had suffered several months. Although he was past seventy and in declining health he continued to see as much of his practice as he was able. His last illness was sudden and lasted only about five days.

Dr. McDougal, son of John Wesley and Mary Peden McDougal, was born on September 1, 1879, in Kemper County, Miss., near DeKalb.

His father John Wesley McDougal, a Confederate veteran, was born in Tishomingo County and was descended from Duncan McDougal who came from Argyleshire, Scotland, to Cumberland County, North Carolina, about ten years before the Revolutionary War.

The family moved across Tennessee and north Alabama to Mississippi and were among the earliest settlers of old Tishomingo County, locating near what is known as McDougal Creek.

An inquiring and diligent student all his life, Dr. McDougal took his early education at the Iuka Normal Institute and the Oakland College, Yale, Miss.

For nine years he taught school in Tishomingo County and then entered the Medical College of the University of Louisville, from which he graduated in 1907. He took clinical instruction at the Louisville City Hospital and in later years attended the University of Chicago (1913) and Tulane University (1933) for postgraduate study.

Dr. McDougal began the practice of medicine in July, 1905, in Burton, Prentiss County, with Dr. Robert B. Smith as his preceptor and remained at Burton until September, 1908, when he moved to Burnsville in Tishomingo County. After five happy and successful years at Burnsville he moved to Booneville where he has lived continuously except for three years spent on the staff of the Mississippi State Insane Hospital at Jackson. From 1930 to 1932 he was a member of the State Hospital staff and in 1944 he served as superintendent of the Hospital. It is estimated that in private practice he delivered more than 4,000 babies.

Having always the deepest reverence, for and highest pride in the medical profession and in a doctor's role in the community. Dr. McDougal always took an active role in professional organization. He was a member and leader in the county, Northeast Mississippi and state associations and was a member of the American Medical Association.

For eight years (1916-1924) he was a member of the State Board of Health.

He was a 32nd degree Mason of the KCCH Shrine, also grand master of the State Lodge. He served as the medical member of the draft board for World War I and as a member of the regional Appeals Board in World War II. In the first World War he volunteered for service abroad but his resignation from the local board was rejected.

The talent which Dr. McDougal had in great preeminence was a gift for friendship.

Few men have enjoyed friends more or had more loyalty for friends.

He gave much happiness and hence, took much happiness for himself.

On October 12, 1905, Dr. McDougal married Miss Lula Bell Smith of New Hope, Prentiss County. Besides his widow, he leaves three sons surviving, Myres Smith, of New Haven, Conn., and Luther Love, Jr., and Bolivar Smith of Tupelo, Miss.

DR. J. E. TURNAGE

One of Mississippi's oldest and most prominent practicing physicians, Dr. Johnson Ed Turnage, died in Montfort Jones Memorial Hospital of Kosciusko October 26 after a long illness. He was 68.

Born in Kosciusko, Dr. Turnage was son of late Mr. and Mrs. E. B. Turnage. He received his medical degree at Memphis Hospital Medical College in 1902 and practiced in Zama and Lake before coming to Kosciusko in 1940. He was active in church, civic and professional duties until recent weeks when health failed. Dr. Turnage was a Mason, Shriner, member of First Baptist Church and on the staff of Montfort Jones Memorial Hospital.

Besides his wife, Mrs. Ida Mae Hollingsworth Turnage, he leaves three sons, W. E. Turnage, Jackson; Dr. W. H. Turnage, Newton; Dr. J. L. Turnage, Kosciusko; a sister, Miss Laura Turnage, Water Valley; two brothers, W. S. Turnage, Water Valley; R. N. Turnage, Crenshaw.

DR. L. C. DAVIS

Services for Dr. L. C. Davis, Greenville physician, who died at Sanatorium, Miss., were held at the family home October 28. He was sixty-one.

Dr. Davis who practiced medicine for 22 years and at Hollandale and Priscilla, was born at DeKalb, Miss. He received his medical degree at Tulane University in New Orleans.

He leaves his wife, Mrs. Cleona Davis; a daughter, Emma Jo Davis; and a son, Leon C. Davis, Jr., of the United States Army.

DR. BROOKS D. GOOD

Services for Dr. Brooks David Good, were held at the graveside in the Hill Crest Cemetery at Holly Springs, Sunday morning, Nov. 7.

Dr. Good had been ill for a month. His death occurred in Colorado Springs, Colo., where he had lived for 20 years and was physician in charge of Cragmore Sanatorium. He was a graduate of the University of Mississippi, Tulane University Medical School and, before going to Colorado Springs, practiced in Minnesota.

He was a veteran of World War I and a member of the Presbyterian Church.

Dr. Good leaves his mother and a sister, Mrs. Margaret G. Wilson, in Colorado Springs; a brother, Robert M. Good, Hollister, Mo.; and two half sisters, Mrs. Peter Brown of Water Valley and Mrs. Mal C. Anderson of Batesville.

DR. CHARLES G. BELL

Dr. Charles Gideon Bell, prominent Canton physician, died from a heart attack in St. Dominic's hospital in Jackson early October 27 following a few days' illness.

He came to Madison County in 1904 after graduating from Vanderbilt, and began practicing medicine at Shocco, a community five miles east of Canton, and a few years later moved to Canton and was associated with the late Dr. V. S. McLellan. Later he entered private practice.

He enlisted in the medical corps of the United States Army during the World War I and served at Camp Meade, Maryland. He held the rank of captain at the close of the war, when he returned to Canton and resumed his medical practice. He was a member of the Presbyterian church, a Mason and an Elk. For the past twenty-five years he has been chairman of the board of directors of the Canton Exchange Bank. Dr. Bell also served as local surgeon for the Illinois Central Railroad and physician for the Southern Furniture Company. He was recognized as one of the leading physicians of the state.

He leaves his wife, Mrs. Hattie Trafton Bell, of Canton; one daughter, Mrs. John Overton and one little granddaughter, Virginia Bell Overton, of Memphis; three sisters, Mrs. Jessie Waldrop of Meridian; Miss Frances Bell of New York City, and Miss Annie Bell of Canton; two brothers, Marvin Bell and Joe Bell of Columbus.

DR. M. L. McKINNON

Services for Dr. Mack Laughlin McKinnon, 63, physician of Lauderdale, who died at Rush Memorial Hospital in Meridian November 13 from injuries received in an auto crash, were held in Meridian November 15.

Dr. McKinnon received a skull fracture, shock and other injuries when he was thrown from his jeep when it was in a collision with another machine near Toomsuba.

Born at Hattiesburg Dr. McKinnon received his medical training at the University of Tennessee, and did postgraduate work in pediatrics at the University of Pennsylvania.

He began the practice of medicine in 1910 in South Mississippi. Before locating at Lauderdale about 27 years ago, he was company physician for the Sumter Lumber Company at Electric Mills.

The physician was chairman of the board of stewards of the Lauderdale Methodist Church, secretary of the Lauderdale school board, a Mason and Shriner.

Interested in community affairs during his residence at Lauderdale, Dr. McKinnon was quick to lend aid, medical or financial, to those in need. His counsel and advice were sought by scores who came to look upon him as a friend and to whom his death came as a personal loss.

He leaves his wife, Mrs. Leslie McKinnon of Lauderdale; a daughter, Miss Marianne McKinnon, student at the University of Alabama; two sons, Mr. L. McKinnon of Atlanta, Ga., and Martha McKinnon of Lauderdale; two brothers, Dr. H. L. McKinnon of Hattiesburg and Alex McKinnon of Petal; two sisters, Mrs. H. C. Dearman of Hattiesburg and Mrs. Louisa Carter of Shreveport, La.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—**Harvey F. Garrison, Jackson.**
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

Spinal Anesthesia. The Protection of the Baby in Cesarean Section, Kenneth M. Heard, Anesth. & Analg. 25:191-99, Sept.-Oct. 1946.

"The effects of the type of anesthesia upon the infant and the mother were compared in 360 cesarean sections. Of 202 normal babies born to normal mothers approximately 20 per cent of those delivered with inhalation anesthesia required resuscitation, in contrast to only 1 per cent of those with whom spinal anesthesia was used. The presence of a circulatory or respiratory disease or some complication of pregnancy in the mothers of 90 normal babies did not alter the statistics significantly. Abnormal babies were classified as those premature or those with some major congenital anomaly. Normal mothers gave birth to abnormal babies in 16 cases. With 'gas', i.e., cyclopropane or nitrous oxide, and with spinal anesthesia, 1 infant in 4 and 1 in 5 respectively required resuscitation in this group. There were no serious complications. In 52 cases both mother and child were considered abnormal. In this group ether was used nine times of which 7 infants required resuscitation, and 5 died. Of the 17 cases given 'gas' anesthesia, 7 babies required resuscitation of which 6 died. Twenty-six women in this group were delivered under spinal anesthesia, 7 of these infants requiring resuscitation which was followed by 3 deaths.

The incidence of severe operative hemorrhage and severe postoperative pneumonia in the mother was lower in the group delivered under spinal anesthesia. When bleeding exists prior to operation, spinal anesthesia appears to be contraindicated."

COMMENT: There are a great many different opinions on the type of anesthesia to be used in obstetrics, regardless of type of delivery, but it seems that the investigation relative to this subject in this article is significant. We would suggest that it be considered very seriously in all cases, since after all we have two lives to be considered instead of one and the type of anesthesia often has a very bad effect on the unborn baby.

SURGERY

Evaluation of Papanicolaou's Method of Cancer Diagnosis. Jane Brady Wiles, M. D., and C. Alexander Hellwig, M. D., Amer. Journ. Clin. Path.: 18, 283, 1948.

Papanicolaou recognized cancer cells in vaginal smears as early as 1928, but his diagnostic method was not widely known until publication of his and Traut's atlas in 1943, the "Diagnosis of Uterine Cancer by the Vaginal Smear." The method was accepted enthusiastically by gynecologists, and was recommended as a part of every routine examination. Some State Board of Health laboratories even offered such a diagnostic service to all physicians in their respective states. In spite of the widespread publicity this method has since received, little concerted effort has been made by pathologists to evaluate it. Gates and Warren, in 1945, reported their results on 341 vaginal smears, but were unable to arrive at a definite conclusion. They felt that the procedure, while highly promising, had yet to be clearly established as a means of final diagnosis and that there had to be more specific information on the limitations and advantages of the method before it could be accepted as a routine test.

In 1947, Wiles and Hellwig, working the Department of Pathology, St. Francis Hospital and Sedgwick County Tumor Clinic, Wichita, Kansas, attempted such an evaluation of Papanicolaou's method. During a period of nine months they studied more than 300 smears, and their report is based on the study of 70 gynecological cases in which the results could be satisfactorily compared with the diagnoses obtained by tissue examination.

The authors' procedure of taking vaginal smears was that described by Papanicolaou. They routinely, however, made three smears in each instance; two of which were stained by Papanicolaou's trichrome method, and the third with Harris' hematoxylin and eosin. The results of the latter method compared very well with the stain recommended by Papanicolaou, as both procedures use the same nuclear stain, i.e., Harris' hematoxylin. Wiles and Hellwig emphasize that the trichrome stain introduced by Papanicolaou is not a specific stain for cancer cells, as many physicians seem to believe. The only advantage of his staining procedure results from the light staining of the cytoplasm which preserves the translucency of the smear and accentuates the nuclear changes.

No special equipment or technical personnel is necessary if Harris' hematoxylin and eosin are used. The smears, after fixation in a solution of equal parts alcohol and ether, may be stained with the daily batch of paraffin tissue sections. If care is taken to avoid overstaining with eosin, the cytologic changes are no more difficult to recognize than on smears stained with the Papanicolaou method.

Wiles and Hellwig found, however, that the procedure advocated by Papanicolaou of instructing patients in the preparation of their own smears, and allowing them to do so, was unsatisfactory. Thin smears are essential for a satisfactory cytologic study, and these are best obtained by a competent physician or well trained assistant. Thick smears do not permit a satisfactory examination. Drying of the smears must be avoided; they should be placed immediately in the alcohol-ether fixative solution. Fixation for five minutes is sufficient but slides may be left in the fixation for as long as two weeks.

In a review of the literature Wiles and Hellwig found that numerous attempts had been made since the unsuccessful efforts of Lebert and Hannover, in 1932, to characterize morphologically the "specific" cancer cell. The best known of recent attempts to diagnose cancer from the morphology of a "single cell" is that of MacCarty in 1929, whose work was refuted by Guttman and Halpern in 1935. In 1942, Knake came to the conclusion that there is no morphological characteristic known that will differentiate a malignant from a non-cancerous cell. In 1946, Papanicolaou described the nuclear changes of cancer cells as offering the most reliable diagnostic criteria of a malignancy. Wiles and Hellwig mention the work of Babes and Meyer (1932), and Schiller (1938), and conclude that Papanicolaou's description of the cellular changes in cancer does not add anything new to their already known morphological characters; that such changes are found after irradiation, and in sections of degenerated or poorly preserved tissue.

In Wiles and Hellwig's series of 70 cases, 44 cases were reported as negative, 23 as positive, and 3 as suspicious. Three of the smears (7 per cent), which were considered to be negative, were incorrect, as proven by subsequent tissue examination. Likewise, two (9 per cent) of the smears considered to be positive; and two (66 per cent) of the suspicious smears were later proven to be incorrect. The average accuracy of Papanicolaou's method in Wiles and Hellwig's experience was 80 per cent.

The higher percentages of accuracy by Papanicolaou's method as reported by Meigs and coworkers; Ayre; and Jones and coworkers have been accomplished, according to Wiles and Hellwig, not by a single examination, but by a number of smears repeated at different times in a given case. Meigs, for example, made the statement that only 6 of 16 successive smears taken in a period of seven days from a woman known to have cancer, showed cancer cells. Gates and Warren gave their interpretation of each submitted smear on pathologic criteria only, and were not in possession of clinical data. As a result, they present a much less favorable picture in respect to the accuracy of Papanicolaou's diagnostic method.

Papanicolaou and Traut maintained that the vaginal smear is the only practical method known which is useful in revealing the very early cervical carcinoma. Wiles and Hellwig emphasize the fact that it is impossible to differentiate on the smear between degenerative and precancerous changes, carcinoma **in situ**, and invasive carcinoma; and that these facts constitute the greatest disadvantage of Papanicolaou's method. They agree with Gates and Warren that the diagnosis and treatment of "early carcinoma" should not be lightly undertaken, since many of the patients are in the childbearing age and some are very young.

Wiles and Hellwig summarize by stating that Papanicolaou's method has a definite, but limited, usefulness wherever biopsy or curettage is not feasible. In instances where a suspicious lesion is accessible to biopsy or curettage, the vaginal smear method is not indicated. By the vaginal smear it is not possible to differentiate between changes due to irradiation, carcinoma in situ, and invasive carcinoma. Therefore, tissue examination can never be replaced by vaginal smears in the decisive diagnosis of uterine cancer.

State Board of Health

Felix J. Underwood, M. D.

STATE HYGIENIC LABORATORY

January 1-September 30, 1948

H. C. Ricks, M. D., Director

The Laboratory has operated during the period with a reduced technical staff except during June, July, and August when additional employees were added by the employment of college students as a temporary expedient. The employment of these students on a temporary basis had a two-fold effect. It gave the student an opportunity to determine whether or not she was really interested in entering the laboratory field as a profession. It also gave us an opportunity to observe the students with the view of offering employment to a select number on a permanent basis after they have finished their college work.

The Laboratory has continued to render coöperative service to the other divisions of the Board of Health by preparing supplies for their use in executing their respective programs. Sterile containers were supplied the Division of Sanitary Engineering for the collection of water samples from both private and public supplies. Sterile vials for collecting milk samples from producers supplying milk to processing plants as a part of the program of the Sanitary Engineering Division were also furnished. The chemist from the laboratory rendered consultative service to the Division of Sanitary Engineering on numerous occasions in helping to solve problems concerning water treatment and sewage disposal. The laboratory has made chemical and bacteriological examinations of water from private and public supplies being developed by commercial well drillers in order to assure a potable water supply for the individual family as well as the citizens using a public supply.

Specimen containers have been prepared and furnished to the Division of Preventable Disease Control, county health departments, and physicians to assist them with their disease control programs and in the diagnosis of individual cases. As a part of the syphilis control program the Laboratory has prepared and furnished supplies to the rapid treatment centers for collecting and shipping blood and spinal fluid specimens. Serological examinations have been made of blood and spinal fluid specimens from these centers as a coöperative effort with the Division of Preventable Disease Control in the control of syphilis.

Sodium fluoride solution has been prepared by the Laboratory for the Mouth Health Division for distribution to the dentists of the state in an effort to reduce the incidence of dental caries. Silver nitrate solution in wax ampules has been prepared and distributed to physicians, hospitals, and county health departments in a coöperative effort with the Division of Maternal and Child Health in the program to prevent ophthalmia neonatorum.

Flour and corn meal have been examined by the chemist to determine the vitamin content where enrichment was required. This service has been especially useful to state institutions that purchase these products for consumption by inmates and employees.

The Clinical Laboratory Advisory and Relief Service has continued uninterruptedly during the period. The two technicians have made 174 advisory visits to the laboratories of physicians and hospitals. The requests for service are greater in number than the technicians are able to comply with. Five local laboratory technicians have received refresher courses in laboratory techniques at the laboratores of the Mercy Hospital in Vicksburg. Two college graduates have been awarded one year scholarships in medical technology in the laboratories of this hospital.

Three of the senior colleges in Mississippi have now announced courses leading to a bachelor of science degree after the student has completed three years of approved academic work and one calendar year of training in a laboratory approved by the American Medical Association for training technicians. These colleges are: Mississippi State College, Delta State Teachers College, and the University of Mississippi.

Tabulations of Specimens Examined by the State Hygienic Laboratory Jan. 1, through Sept. 30, 1948

	Total
Blood specimens for serodiagnosis of syphilis	206,693
Spinal fluid for serodiagnosis of neurosyphilis	9,462
Gonococcus	5,221
Darkfield for diagnosis of early syphilis	13
Spinal fluid for diagnosis of meningitis	82
Blood counts	1,103
Other cultures	163
Miscellaneous cultures	386
Animal inocculation for diagnosis of tuberculosis	173
Vincent's angina	172
Bacteriological water	4,327
Chemical water	29
Milk bacteriological examination	2,836
Miscellaneous milk (human milk for fat content)	17
Malaria	6,016
Rabies treatments distributed	1,449
Typhoid vaccine distributed	cc. 321,200
Silver nitrate ampules distributed	34,055
Blood specimens for agglutination and culture	7,975
Stool specimens for diagnosis of intestinal parasites	19,181
Nose and throat specimens for diagnosis of diphtheria	4,185
Sputum specimens for diagnosis of tuberculosis	6,136
Specimens for culture for diagnosis of tuberculosis	40
Stool specimens for culture	6,728
Urine specimens for culture	5,733
Urinalysis	3,993
TOTAL NUMBER OF SPECIMENS	290,989
TOTAL NUMBER OF QUANTITATIVES	37,937

* * *

COMMUNICABLE DISEASE REPORTING

What are you, as an individual physician, doing about morbidity reporting? Compulsion should not be needed. It probably will not be attempted, for it is felt that physicians desire to do the right thing. Is it not of great concern to the public as to how much influenza, pneumonia, tuberculosis, syphilis, whooping cough, measles and the many other communicable diseases are occurring in the state? When you fail to report such information, you are hindering control and protection against this group of diseases. Unnecessary cases are occurring as a result of this failure on your part.

A. L. Gray, M. D., Director
Preventable Disease Control

NORTHEAST MISSISSIPPI MEDICAL SOCIETY

December 14, 1948, Tupelo, Miss.

Papers:

Cysts and Pseudo-Cysts of the Pancreas—Report of Cases—Dr. R. D. Kirk, Jr., Tupelo.

Low Sodium Diet Therapy of Hypertension—Dr. H. P. Boswell, Jr., New Albany.

Handling Cardiac Emergencies—Dr. Thomas F. First, Professor of Medicine, Vanderbilt University, Nashville, Tennessee.

Woman's Auxiliary

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Third Vice-President	Mrs. W. H. Anderson	Booneville
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Ninth District ....Mrs. F. J. Harrell
Biloxi

NORTHEAST MISSISSIPPI MEDICAL AUXILIARY

The Northeast Mississippi Medical Auxiliary will meet Tuesday, December 14, 1948, 2 p. m., Tupelo Country Club.

Program:

Selected Christmas Reading—Miss Shelia Ann Trapp.

Christmas Music Program—Presented by Miss Eva Gene Kersh, voice teacher of Tupelo High School, and her voice students.

Mrs. J. C. Green—President.

ANNOUNCING——

THE TWELFTH ANNUAL MEETING OF

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Conference Headquarters — Municipal Auditorium

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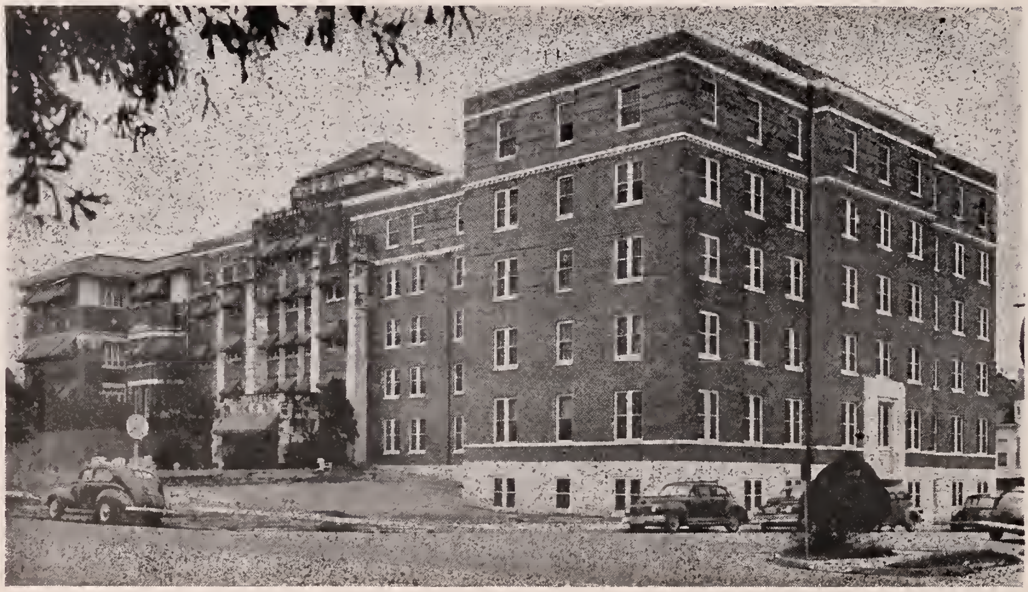

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References: 1. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:442, 1936.
2. Dodd, K. and Minot, A. S.: *J. Pediat.*, 8:452, 1936.
3. Sahyun, M.: *Am. J. Dig. Dis.*, 13:59, 1946.

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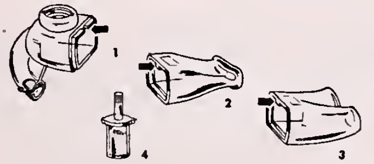

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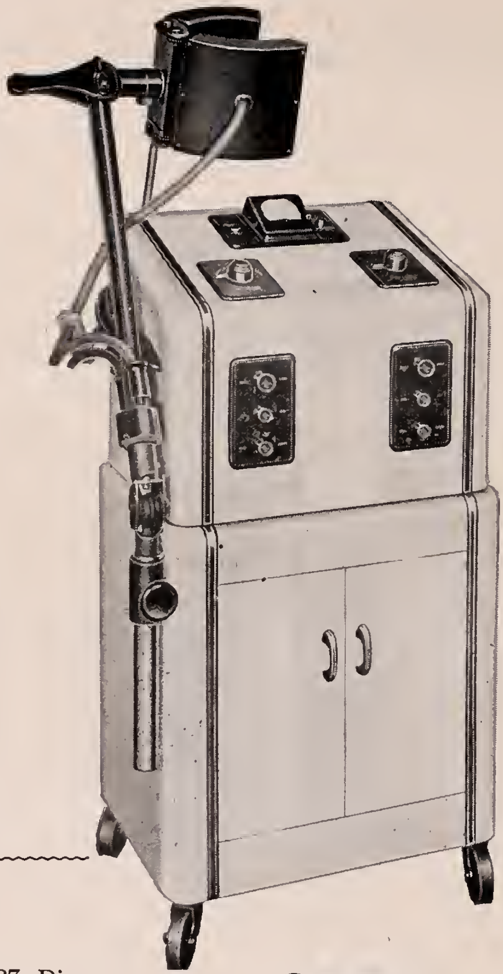

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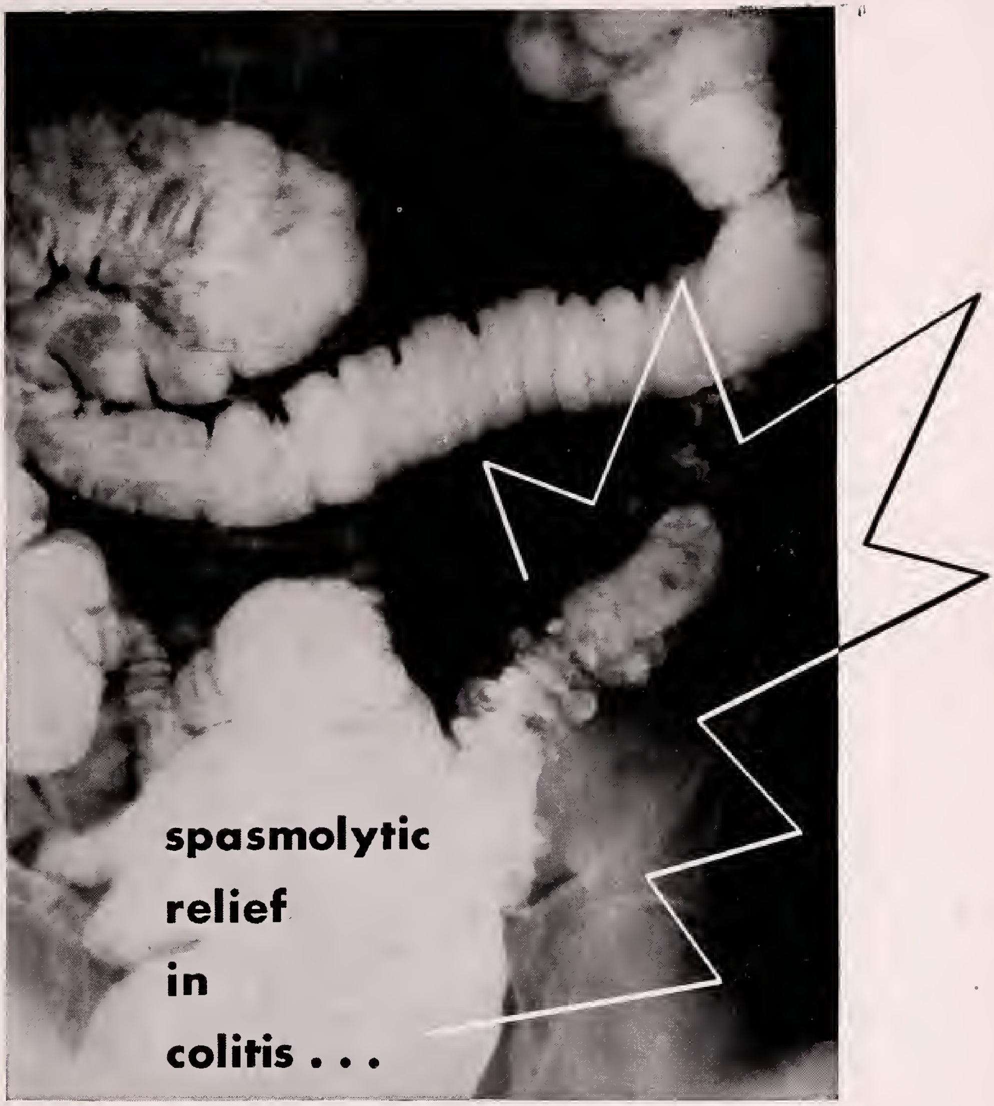

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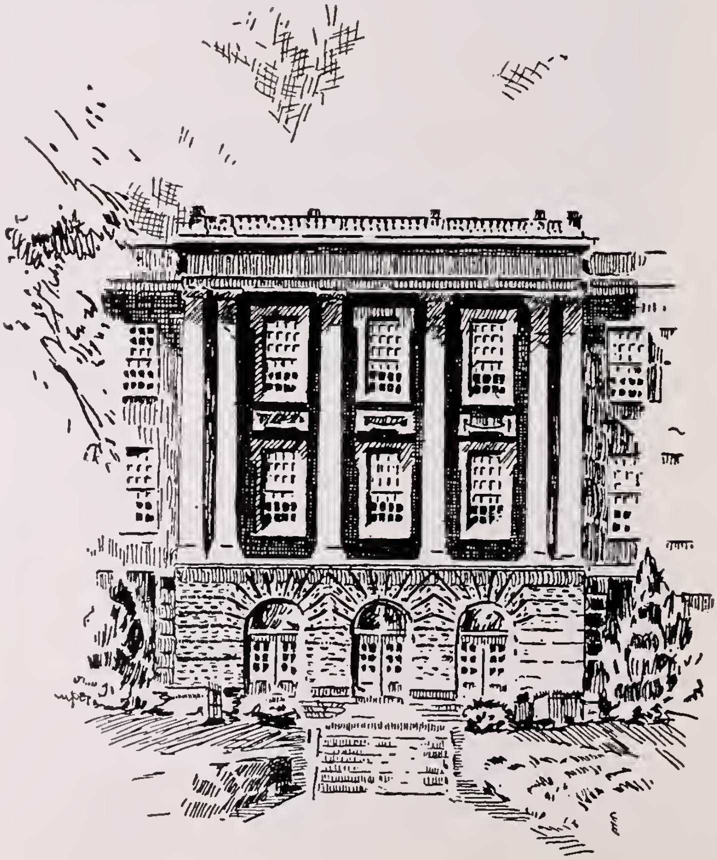

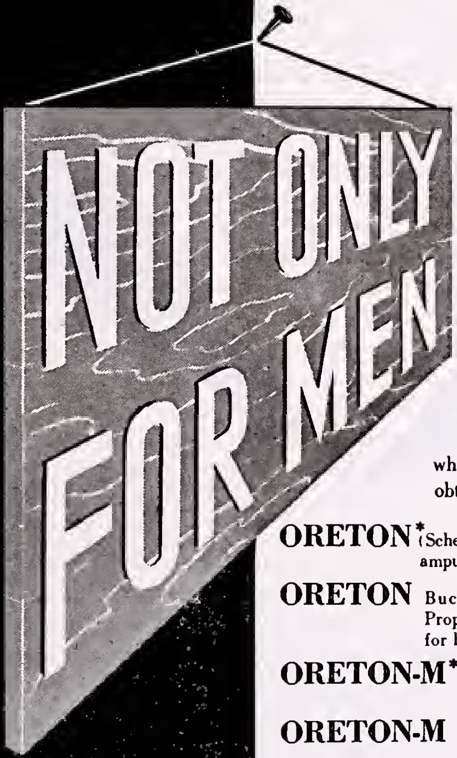

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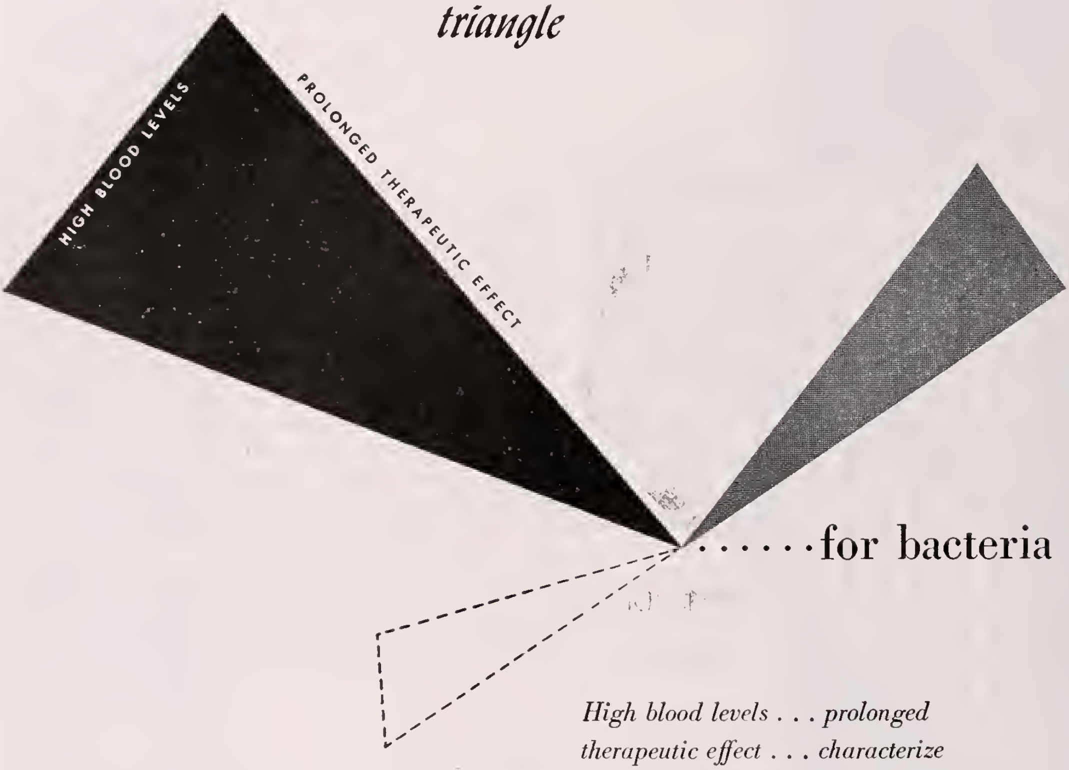

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Retarded Children*

R. V. PLATOU, M. D.†

New Orleans, La.

ENCOUNTERED frequently enough to constitute an appreciable portion of any medical practice among children are problems concerned with various types and degrees of mental retardation. All too often, those of us working in medical schools and diagnostic centers may get the impression that there is an inordinately long "lag-phase" from the time parents first suspect that something is wrong with such children to the time that that something is elucidated. We can all agree that many of the clinical manifestations in this group defy satisfactory explanation or classification; we can all sympathize, on the other hand, with the desperation of parents who will go to almost any lengths to secure help, who will grasp at any or all straws extended by medical discoveries misinterpreted for the laity by our daily newspapers, by well-meaning neighbors and friends, or by faith-healers and quacks. Questions these parents seek to have answered may sometimes seem endless to the physician who is already too busy caring for patients whose problems he understands better or can manage with more confidence, and may even seem at times designed particularly to trap him into unwise answers. All too often, then, he takes refuge in platitudes—which satisfy neither him nor his questioners and accomplish nothing or less than nothing toward solution of their problems. Fortunately, most of the questions asked by intelligent parents of defective children center about five problems, to most of which we can usually offer at least some help. 1) **Why** does our child have this defect? 2) What can we do to give him the best possible chance to overcome or compensate for his difficulties? 3) What is the eventual outlook? 4) How sure can you be of your diagnosis, doctor? 5) Should we have other children?

Philosophies vary, but mine has been to take parents into confidence at the first opportunity, to make explanations and prognoses as early and definitively as circumstances warrant, but at the same time stressing the importance of basing answers so far as possible on objective data. I have seen no harm in anticipating questions of parents as a means of furthering their coöperation in all the studies we should carry out to satisfy the usual implied or direct request that we leave no stone unturned. It seems to me that such an attitude of coöperation **has** to be developed if the mental and emotional welfare of the entire family group is to be best served.

Brennemann emphasized, as he well could, that "few, if indeed any, situations in the practice of medicine call for a more tactful exercise of what one may call the art of medicine than does the occasion for telling parents that they have a child of subnormal intelligence . . . . We are dealing with a situation in which a verdict must be rendered that is worse than a sentence of death."[1] He emphasized the importance of tact, sympathy, words carefully chosen, an approach born of experience, avoidance of deception, and the necessity for completing a careful and thorough examination even though diagnosis and prognosis seem obvious at a glance. Intelligent parents should, and in my experience quite invariably have, appreciated these things. While not wishing to seem in the least facetious, I think it worthwhile to point out the analogy the approach bears to that we teach for sex education of growing children.[2] Questions should be answered honestly and tactfully but as directly as they're asked, in language the questioner can understand, usually better in many short sessions rather than in one grand lecture designed to close the matter as we would a textbook.

Altogether too often, the problems of the mentally defective child are aggravated or magnified by an understandably overprotective attitude of the parents that may go so far as to interfere with a sensible approach, adequate diagnostic study, proper corrective training, or even an approximation of attainments possible within the child's own limited capabilities. An extreme example: Not so long ago, I was asked to pay a "social visit" to a boy of nine years who was said to have some form of cerebral palsy, repeated mild convulsions, and probable mental retardation; the mother specifically requested that no mention of the boy's difficulties be made in his presence, that no medical instruments be in evidence, and that no pretense of a regular examination be made. When I remonstrated that it seemed high time this child be given the privilege of trying to understand and cope with his own problems and that it wouldn't be fair to them, to the child, or to myself to venture a diagnostic opinion or recommendations for care based on whatever superficial impression might be gained by such a casual social visit, I was amazed to learn that these particular parents—outwardly sensible and substantial citizens—had never before allowed their child the company of anyone outside the family group lest he learn that he wasn't like other children, lest his failure to meet competition cause feelings of frustration, lest he have one of his very occasional mild convulsive seizures unattended! What feelings of guilt motivated such extremes of overprotection? We don't know yet, but will certainly have to work them out before we can hope to accomplish much of anything constructive for their unfortunate child. Good or bad, **patients have families** and **children have parents**; to achieve success in problems concerned with the **whole** welfare of children, we physicians must continually remind ourselves of such simple truths and of our consequent responsibilities to the whole family! But to get at the questions . . .

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†From the Department of Pediatrics, Tulane Medical School, the Charity Hospital of Louisiana, and the Ochsner Clinic, at New Orleans.

*State Pediatric Society, May 10, 1948.

"Why did this happen?" Many times we can only say we wish we knew. Relatively few recognizable clinical syndromes characterized in part by mental retardation follow known modes of inheritance; Warkany[3] has pointed out how difficult it is to make generalizations from analyses of the small number of human pedigrees ordinarily available for study, or to apply observations made in one family to prognosis for another. There is, on the other hand, increasing evidence that environmental influences during pregnancy play a large part in the production or congenital anomalies, undoubtedly including many types of cerebral defects; Ingalls[4] has recently again presented rather imposing evidence to suggest that it is the **timing** of these influences, perhaps even more than their exact nature, that causes aberrations from normal embryonic or fetal development. A careful and chronologic inventory should always be made of maternal infections, specific or general dietary deficiencies, metabolic disorders, obstetrical abnormalities, and expose to physical or chemical agents that might cause fetal anoxia or otherwise affect development of the unborn child. The rubella syndrome, now so well publicized through the medium of the bridge table, is probably only a pattern for a number of similar cause-and-effect relationships. Despite general appreciation of the dangers of exposure to x-rays early in pregnancy, many of us still encounter occasional infants we feel compelled to classify as examples of radiogenic microcephaly. Bases for isoimmunization, similar to and including the famous Rh pattern, are undoubtedly responsible for a number of disorders in the mother, fetus, or newborn; consequent cerebral anoxia in the latter occasionally accounts for the syndrome we have come to call by the rather inept term "kernicterus." The effects of various analygesic and anaesthetic agents at the time of delivery need hardly be mentioned here, nor the importance of good obstetrical and pediatric care for the prevention of any other cause for cerebral anoxia in the neonatal period. This sketchy review of a few causes serves only to remind us of some that might be correctible, of some that might lead to combinations of defects or clinical syndromes in which various types and degrees of mental retardation are prominent. Because most congenital abnormalities are probably established within the first eight weeks of prenatal life, it is this short organogenetic period that should be most closely scrutinized by the clinician seeking explanations among unfavorable environmental influences. While there might seem to be small comfort in hindsight—in learning too late that any given abnormality might have been prevented—it is only by seeking such information that we can progress further in constructive efforts to reduce the incidence of these tragedies. And there is real comfort in knowing that a given abnormality does not follow known modes of inheritance but may be explained by preventable causes during pregnancy; in this fortunate situation, the zealous clinician who takes the time to work out a careful history is amply rewarded when he can conscientiously advise parents to have other children.

"What can we do?" This of course depends on definition of what's wrong. In my own thinking, advice concerning efforts to be expended for education or other therapy is governed largely by careful evaluation of the child's educability. This, in turn, often depends on a series of time-consuming formal and informal estimates of intelligence, judgment of progress after relatively short periods of training and observation, careful appraisal of family and community attitudes. Facilities for the care of handicapped children, either public or private, are still so limited that we as physicians must assume much of the responsibility for selecting the most promising and deserving candidates. In all parts of the country and at all levels, additional facilities are needed—from simple but adequate custodial care for those hopelessly retarded, to more elaborate units providing maximal opportunities for those who are educable.

Unless or until specialized treatment centers can be provided to fit the needs of a given patient, we should discourage parents from all too-prevalent attitudes of overprotection, encourage them to accept their child as he is and to permit him to do everything he can or will for himself, help them to realize that even the most handicapped child profits greatly by opportunities to socialize or compete with his peers. I think E. R. Carlson's book, "Born That Way,"[5] serves an important purpose in perhaps overemphasizing to parents the importance of allowing handicapped children these privileges if they are to find any useful place in society.

But what to do about those who are hopelessly retarded and uneducable. Fortunately, perhaps, many of these do not survive for long—combinations with other congenital anomalies, poor resistance to intercurrent infections, and limited facilities for their care account for high mortality rates at early ages. Should all that modern medical science has to offer be expended to save such lives, or should we passively condone nature's processes for eliminating those who can be no more than a burden to society? Only careful study and appraisal of the individual child and his family can guide the physician who must make such a decision; a median course is impossible to define. As to advice for custodial care for patients such as those with Mongolism: When such care seems advisable and can be arranged, it should be accomplished at the earliest possible age[6]; attachments developing with the passage of time make separation increasingly difficult. If custodial care in a state institution is contemplated, parents should be told that the process of commitment is a legal one, that application should be made to their local court, that waiting lists are usually long, and that few such institutions can accept infants or small children.

"What is the outlook?" Once the diagnosis is established, a satisfactory answer to this question can ordinarily be found in any one of a number of easily available texts. In a few situations, the answer may be obvious at a glance, but in most of these it would almost always be foolhardy and certainly brutal to give it as quickly. As Brennemann said, the verdict to be given may often be worse than a sentence of death—but it need never be as abrupt. Often, an accurate prognosis cannot be made according to measurable criteria, particularly when the diagnosis is in doubt. Then we must frankly and honestly base our opinions solely on our own clinical experiences—even to the point of admitting that we have never seen "anything quite like this case" and suggesting that we'd appreciate the opinion and advice of someone who **has**. Regardless of how hopeless, guarded, or hopeful a prognosis may seem, we should never fail to emphasize that overprotected children are usually unhappy children, and that even the most handicapped individual is happiest with the maximal independence of which he is capable: "Just because the child is sick, don't make his life miserable by spoiling him." It is understandably easy for even the most intelligent parents to overprotect and overindulge a retarded child—even at the expense of neglecting emotional needs of their normal children.

If the child is educable, on the other hand, and if financial circumstances, available facilities, or emotional stability of the child and his parents permit, no effort or expense should be spared to secure maximal training. This is particularly to be emphasized when serious motor disabilities account in large part for varying degrees of apparent mental retardation.

"How sure can you be of your diagnosis?" This question does not necessarily imply lack of faith in the abilities of the diagnostician; it should always be expected and should always have a frank and honest answer. When a particular diagnosis can be final and absolute, it is often helpful to quote from or refer intelligent parents to authoritative standard texts. When, as may often be the case, a suspected clinical syndrome is incomplete and an unequivocal diagnosis cannot be established, the physician should frankly so state. No single doctor can possibly hope to act finally and authoritatively in all clinical situations; when time, consultations, and more detailed studies seem necessary or desirable, they should be suggested or insisted upon. We are often beset by certain anxious parents hoping to have a diagnosis made "at a glance, without any more examinations, without hurting the child," which misapprehensions must be stilled by adequate explanation of the importance of a definite diagnosis on which so much depends. There is little doubt in my mind that a larger proportion of the syndromes in which mental retardation plays a part could be elucidated than is now the case. There is even less doubt that early and complete study is the best way to adequate explanation and understanding which can do so much to alleviate family tensions centering about these unfortunate young patients. Any physician working toward solution of such a problem must learn to know the child's parents, must make some conscious or unconscious evaluation of their intellectual and emotional maturity, and must weigh accordingly and carefully the words he uses for explanation and prognosis. There can be no routine technic. The approach to one set of parents might best be very punctilious and authoritative in tone, to the next ones more deliberate and qualified . . . in either case, sympathy, tact, and careful choice of words. The words chosen will usually be mulled over and carefully studied for some time to come—choose them well to avoid misinterpretations, double meanings, over or underweighting. No diagnoses are harder to accept than hesitant and uncertain ones, save perhaps dishonest ones. Parents of retarded children usually have developed a lot of patience by the time they seek medical help; they are willing and frequently anxious to postpone a final diagnosis until enough study has been completed **to be sure**—that's what they come for; they will usually and justifiably resent or reject snap judgments for any but the most hopeless or obvious defects.

"Should we have other children?" Justification for an affirmative answer—so eagerly sought by most parents who ask this question—lies in painstaking study to determine: a) that the syndrome in question does not follow basic laws of inheritance, and b) that there have been preventable or correctible environmental causes which might explain the defects making up that syndrome. The earlier studies of the latter type can be done, the better; with the passage of time, important details are often forgotten, unimportant ones magnified. It seems hardly necessary to emphasize the potential usefulness of a simple calendar, if one hopes to relate causes and effects to type and timing of particular insults to the embryo or fetus. Even with the most conscientious study, however, some tragic mistakes in answering this question either way will undoubtedly be made . . . whether on the highway or in the consulting room, we can fly in the face of destiny just so often. It will be some time yet before we're consistently able to arrive at a correct answer by objective criteria. Probably because most pedigrees for humans are short and incomplete, only a few combinations of defects of the most obvious sort are thought to be explainable according to established modes of inheritance. It is not within the scope of this brief paper to discuss even these few at present; several useful references are appended for those who wish to pursue this interesting aspect of the problem further.[7-10]

Summary

Problems centering about mentally handicapped children generally require more attention than they receive. The present note merely summarizes one pediatrician's philosophy for approaching these problems, emphasizes the importance of early study for their elucidation, and outlines briefly some answers to questions which are usually of greatest concern to parents.

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The Diagnosis and Treatment of Prostatism*

TEMPLE AINSWORTH, M. D.
and
LLOYD E. DEDDENS, M. D.

Jackson, Miss.

Prostatism is the term used to describe the clinical condition which results from obstruction at the vesical neck. This obstruction may be due to various prostatic pathological processes but the term is generally limited to include the three most frequent causes of obstruction; namely, hypertrophy of prostate, carcinoma of prostate, and contracture of vesical neck. The same clinical condition may be caused by congenital valves of posterior urethra in infants and certain cases of neurogenic dysfunction of the bladder.

At the time I was asked by the chairman to read a paper before this section, we had two physicians in the hospital with prostatism who had neglected themselves until there were marked changes in bladder and kidneys due to increased hydrostatic pressure with very poor kidney function and a considerable increase in nitrogenous waste products in the blood. We felt that these physicians neglected themselves because of fear of an operation. It is our hope that this paper will help to dispel some of this fear for, until the physician himself is convinced of the relative safety and beneficial results obtained from an operation, we cannot expect him to advise his patients to seek relief from vesical neck obstruction.

Diagnosis

The symptoms of prostatism are frequency, dysuria, nocturia, difficulty in starting urinary stream, and decrease in size and force of urinary stream. The aged male has accepted these symptoms as necessary and inevitable accompaniments of growing old. These symptoms usually come on gradually; however, many patients develop retention of urine who have had little or no previous trouble.

On examination, the patient's urine is apt to be entirely negative chemically and microscopically. The prostate, on rectal examination, is usually somewhat enlarged; however, in many instances rectal examination reveals no enlargement of the gland but there may be considerable intravesical enlargement with definite vesical neck obstruction.

This tissue was removed from the vesical neck of a patient who, on rectal examination, had no enlargement of prostate gland.

Most patients with vesical neck obstruction will have some residual urine. Residual urine means the amount of urine left in the bladder after patient has made his best effort to empty the bladder. We feel that except in conditions, such as acute prostatitis, the patient should have an operation to relieve his obstruction if he has as much as three ounces of residual urine. If a patient has symptoms of prostatism, even though he has no residual urine or enlargement of prostate on rectal examination, he should have cystourethroscopic examination to determine the presence or absence of a vesical neck obstruction. Pus in the urine usually indicates some complication, such as a stone, diverticulum or chronic infection of the prostate.

Treatment

The objective of any treatment of prostatism is getting rid of the vesical neck obstruction. If the obstruction is due to carcinoma of the prostate, we advise these patients to have testicles removed and to take stilbestrol by mouth since it has been shown that this will cause a definite recession of the prostatic carcinoma with improvement of the patient's general condition and marked decrease in pain. In early carcinoma, before there is any extension beyond the prostatic capsule, radical perineal prostatectomy is the operation of choice. Prostatic carcinoma which has extended beyond the capsule, but is causing little or no vesical neck obstruction, should be treated with castration and stilbestrol without an operation on prostate. In patients who have definite vesical neck obstruction, we advise transurethral prostatectomy to relieve the obstruction. We have tried castration alone, stilbestrol alone, castration and stilbestrol combined, and we believe the latter to be the most effective method of treatment. If the patient refuses to be castrated, and many of them do, we advise stilbestrol by mouth, usually in dosage of one milligram three times a day. Stilbestrol causes some enlargement of breasts, decrease in libido and, usually, some swelling of feet and ankles. Very rarely does it cause any nausea or vomiting.

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We have seen many patients with marked enlargement of prostate gland due to carcinoma who, on examination two or three months following treatment by castration or stilbestrol, were able to empty the bladder completely. The prostate gland, on rectal examination, had receded in size and in many cases felt to be within limits of normal.

We recently presented a patient at the staff meeting of the Mississippi Baptist Hospital who had had a transurethral prostatectomy over six years ago. Sections of tissue at that time showed adenocarcinoma, grade III. He was castrated and advised to take stilbestrol, one milligram three times a day. He was not seen again until early this year when he returned to the hospital with acute retention of urine. It was necessary to resect more tissues from vesical neck. The sections of tissue removed showed adenocarcinoma, grade III, but there was no evidence of any metastasis and the patient looked perfectly well and healthy.

Another patient whom I castrated six years ago and started on stilbestrol, one milligram three times a day, was still having some discomfort in region of prostate at the end of about three years. I advised him to increase the stilbestrol dosage to two milligrams three times a day. He was in my office about one month ago and told me he had taken 9,600 stilbestrol tablets. On examination, there was no evidence of metastasis and he was voiding without difficulty.

Patients who have a vesical neck obstruction due to benign hypertrophy or contracture of vesical neck are not benefited by castration or stilbestrol, but require surgery on vesical neck to relieve their obstruction.

Before surgery, the patient should have a complete physical examination, routine laboratory examination of blood and urine, blood urea and creatinine determination, urograms if urine is infected, electrocardiograms, and other special examinations when indicated. To prepare the patient for operation, we use blood transfusions if the hemoglobin is low, urethral catheter drainage if kidney function is poor, and chemotherapy if urinary tract is infected. At the completion of the examination, we decide which type of operation is best suited to the patient. The usual types are perineal prostatectomy, suprapubic prostatectomy, retropubic prostatectomy, and transurethral prostatectomy.

We prefer a low spinal anesthetic for operations on the prostate. For the past two years we have given our patients breakfast as usual before operation and we have found that a smaller percentage of them have nausea, vomiting or a drop in blood pressure.

We are reporting results in 1,000 consecutive patients who were operated on for the relief of vesical neck obstruction. Of these 915 had transurethral prostatectomies and 85 of them had suprapubic prostatectomies. The suprapubic method of approach is used on patients who have very large prostates or some complication, such as stricture of urethra which prevents the passage of the resectoscope into bladder. We do not use the retropubic or perineal approach.

Age Incidence: The average age was 68.3 years.

Residual Urine: Over fifty per cent of the patients had complete retention of urine. Others had varying amounts of residual urine up to 2,000 cc. with overflow.

Size of Gland: The average weight of tissue removed in the transurethral prostatectomy was 24 grams. The largest amount of tissue removed at one sitting, 127 grams. The average weight of tissue removed in suprapubic prostatectomies was 72.6 grams. The extremely large prostates are the ones selected as candidates for suprapubic prostatectomy.

Morbidity: The average hospital stay, following transurethral prostatectomy was 8.7 days. The average hospital stay following suprapubic prostatectomy was 20 days.

Pathological Study: There were 109 carcinomas, or an incidence of 10.9. During this same period of time, there were 48 other patients seen with carcinoma of prostate, 21 of whom were castrated without prostatic resection, and 27 received stilbestrol without castration or resection. This gives an incidence of 15 per cent.

Complications: With modern methods of combating hemorrhage, shock, and infection, serious complications following transurethral prostatectomies are relatively rare. Hemorrhage severe enough to require a suprapubic cystostomy occurred twelve times, or in 1.31 per cent of transurethral operations. Another complication which may occur when performing a transurethral prostatectomy is cutting through the capsule of prostate. This permits escape of the irrigating fluid into the perivesical tissue and necessitates a suprapubic incision and perivesical drainage. This complication occurred 18 times, or in 1.96 per cent of the 915 transurethral operations. Incontinence of urine has occurred six times, or an incidence of less than one per cent. Three of these were patients who had carcinoma of prostate and we felt there was some damage to the sphincter from the carcinoma. Infection of the genito-urinary tract, such as epididymitis, pyelonephritis and peri-urethritis, occur in about 10 per cent of the cases but are usually controlled by chemotherapy. The incidence of postoperative stricture of urethra is small if you will avoid trauma of urethra at time of operation. Persistent pyuria in the absence of any complications, such as stone or diverticulum, is usually due to failure to remove all of the hypertrophied tissue.

Mortality Rate: In this series of 1,000 patients, there were 39 postoperative deaths. The mortality rate for the transurethral prostatectomy was 3.7 per cent and for the suprapubic prostatectomy was 6.9 per cent.

Cause of Death: Cause of death is extremely varied, usually due to some vascular accident.

10—Coronary occlusion.
6—Cerebral hemorrhage.
4—Myocardial insufficiency.
6—Anuria and uremia.
4—Extroperitoneal extravasation of urine with sepsis.
7—Postoperative hemorrhage.
3—Pyelonephritis.
2—Pulmonary embolus.
1—Ruptured peptic ulcer.

The first 300 transurethral prostatectomies in this series were performed with the McCarthy resectoscope. The last 615 were performed with the Thompson resectoscope. This instrument is equipped with a tubular steel knife. The tissue is engaged in a fenestra near the end of the instrument and the sliding tubular knife is pushed forward and the tissue within is thus resected. Bleeding is controlled by a wire electrode passed through a fenestra in the sheath and the individual bleeders are coagulated. We feel that with less charring of the tissues, the patient has a smoother convalescence.

When transurethral operations were first introduced, it was thought that it was necessary to make only a channel through the prostate through which the patient might urinate. It was soon found that the majority of these patients had continued severe bladder irritation with burning on urination, frequency, tenesmus, secondary hemorrhage, and early recurrence of the obstruction. These are typical symptoms of a patient who has had a poorly performed, or inadequate resection. In doing transurethral prostatectomies now, we remove practically all of the hypertrophied tissue, thus reducing morbidity to a minimum and giving the patient a lasting and satisfactory result. A patient might better take a chance on an open operation with its increased morbidity and mortality rate than to have a poorly performed or inadequate transurethral operation.

Transurethral prostatectomy is a tedious, painstaking, difficult procedure requiring infinite patience. Many physicians are temperamentally unsuited or lack the patience or manual dexterity necessary to do this operation well.

You might ask why do a resection at all when all of the adenomatous tissue can be quickly and completely enucleated by a suprapubic, retropubic or perineal operation. The answer is that many poor-risk patients can be successfully relieved of their vesical neck obstruction by the transurethral method who could not survive an open operation. Resection carries a much lower mortality rate, tremendously shortened hospital stay, with a smoother and shorter convalescence.

In performing transurethral prostatectomies, we always try to complete the operation within one hour. Except in very large prostates, the operation usually requires about 45 minutes. The average hypertrophied prostate weighs about 40 grams and we usually remove about one gram per minute.

On completion of the operation, an urethral catheter is left in place. The catheter is connected to a closed irrigating system and the nurses are instructed to irrigate the bladder at intervals, depending on the amount of bleeding. The catheter is removed on the third or fourth postoperative day. If the patient voids well and completely empties his bladder, he is discharged on the sixth or seventh postoperative day. If, on removal of the urethral catheter, the patient does not completely empty his bladder, he is taken back to the operating room and more tissue is resected. This has proved necessary in only seven per cent of the last 300 patients.

In regard to recurrence of obstruction, our experience indicates that about five to seven per cent will have a recurrence of their obstruction three to seven years later. These patients do not particularly object when told they must have another transurethral operation, but it requires quite a bit of persuasion to get a man who has had a suprapubic prostatectomy to allow you to open his bladder again. That recurrence of vesical neck obstruction may follow suprapubic prostatectomy is shown by the fact that in one two and one-half-year period it was necessary for me to do transurethral resections on five patients who had had suprapubic prostatectomies.

The results obtained in this series, and similar results reported from other clinics, bear out contention that physicians and their patients no longer should fear a prostatic operation and should seek treatment before irreparable damage has occurred.

DISCUSSION

C. A. Murray (Oxford)—We are impressed with the number of cases reviewed: 1,000 under Dr. Ainsworth's own supervision. We enjoyed the rather novel approach in selling physicians on the modern treatment of prostatism. We have found as I am sure that Dr. Ainsworth and Dr. Deddens have found that physician patients are our greatest asset in this specialty. We are sure from our experience in Greenville that physicians are quite badly neglected in this respect.

The diagnosis of prostatism as was outlined should not be difficult after the condition is full blown. However, on more than one occasion patients come with an abdominal tumor of unknown origin which tumor quickly disappears on decompression of the bladder. Oftentimes we ourselves, as well as the home physicians, are completely fooled by the size of the gland rectally. At times we have difficulty in selling the patient on the idea that he has prostatic obstruction, since he may have been told on several occasions that his gland was small after rectal examination. As the authors state, a residual urine determination is of aid in the diagnosis. We use the cystoscope and panendoscope to decide in these cases where the symptoms are those of prostatic hyperthrophy in a small gland rectally. However, we don't do a routine cystoscopy preoperatively any more. Only in cases of doubt is the prostate and bladder first examined. Our patients generally prefer to be taken to the operating room and if the condition is such that surgery is required would rather for us to go ahead and do it without having to be brought back at a later date. The treatment is standardized. The obstruction must be removed.

We have found as have Doctors Ainsworth and Deddens that not all cancers of the prostate require surgery. In the first place the lesion may have been present long enough for metastasis to exist and the cancer be only discovered when the patient consults an orthopedist for the backache. In any number of these cases there may be little or no obstructive signs. As a routine in these cases we use stilbestrol, one tablet, 5 mg. daily, along with castration. We castrate all colored patients as soon as the diagnosis is made since it is our feeling that they cannot be depended upon to take the stilbestrol as they should. In our white patients we may delay castration until a later date.

In benign prostatic hypertrophy, however, it is a well accepted fact that surgery alone is of value. The method of removing the obstruction and the technique used varies considerably. In our clinic also the transurethral operation is the operation of choice. Most patients demand it. There can be no question but that the suprapubic enucleation is a much easier procedure for the operator but as stated by the authors there is little question but that the transurethral procedure is easier on the patient. It might be stated in defense of the suprapubic route that with modern urinary antiseptics and adequate preparation a one-stage suprapubic enucleation often requires but a little more hospitalization and discomfort than the transurethral method.

We use neither the Thompson nor McCarthy resectoscope. Before entering the Army seven years ago we were using the McCarthy instrument. Then in 1941 when Dr. Nesbit came out with his modification of the McCarthy resectoscope we changed over and have been using it since. This instrument is used entirely with the right hand leaving the left hand free for rectal manipulation of the prostate through Vince O'Conor's rectal shield. The transurethral prostatectomy is performed today as Dr. Ainsworth has stated. An attempt is made to remove the prostate completely to the prostatic capsule. The old procedure of tunneling the prostate should have long since been discarded. We prepare our patients routinely on catheter drainage at which time small doses of sulfa are started along with penicillin, much as the authors have outlined. One of our cardiologists is asked to see the patient preoperatively and recommend medication, delay in operation, etc. We use spinal anesthesia and like Dr. Ainsworth attempt to remove the gland completely within one hour operating time. In case we are unable to do this we feel it is better judgment to return the patient to his room, tell him the truth and take him in two or three days and complete the job. This is necessary in only a very few cases. The feeling is that it is much better to do what the patient will stand twice than more than he will stand once.

We have not irrigated any transurethral prostatectomies postoperatively in the last two and one-half years since returning from the Army, it being our feeling as Dr. Reed Nesbit has pointed out that to do so merely disturbs the body's attempt at control of bleeding by washing the clot away. Of course, a patient must be returned from the operating room with very little bleeding under this technique. Complications in our experience have been very similar and almost in the same proportion as those outlined by the authors. We have felt that our cardiac complications have been considerably lessened by making free use of our cardiologists as consultants. Postoperative stay varies from four days to an average of six or seven as a rule depending upon the distance a patient has to travel.

Again I think we should congratulate the authors on preparing and being able to prepare a paper on 1000 cases under their own supervision with results comparing favorably with the best found obtainable anywhere in the country. Their judgment has undoubtedly been excellent, their technique unquestionable and their conclusion in selling the male members of the profession on the operation as they increase in age as an approach to selling the laymen, is an excellent one.

Frank L. Ramsay (Laurel)—In this discussion I want to reëmphasize some of the cardinal points of this condition which is important to men past middle life.

The diagnosis is not a complicated procedure and can be done in any office. In the majority of cases, this it not done and yet it is very simple. Just do a rectal examination. With the symptons given in the paper and by doing a rectal examination, a correct diagnosis of the type of prostatism you are dealing with can be made. When you feel a large, smooth, elastic-feeling and movable prostate with a definite raphe—that is the hypertrophied type, a nodular, firm, irregular, hard and non-movable prostate—that is carcinoma of the prostate. By feeling such, you can make a definite diagnosis of carcinoma of the prostate without any other procedure. A normal size or smaller than normal prostate and associate vesical symptoms, you should immediately think of the intravesical type or vesical neck contracture. By doing a rectal examination on all males over the age of forty-five, early diagnosis of prostatism can be made before the symptoms arise or become severe and result in retention of urine, hydrostatic pressure damage to the kidneys and generalized damage to the body as a whole. So let us make rectal examination a MUST on the examination of all males over forty-five years of age, regardless of his complaints.

The treatment of prostatism is surgical, except in non-residual cases of carcinoma. This has been well covered by Dr. Ainsworth and needs no further discussion. The advantage of the transurethral procedure is that all types can be approached by this route and excellent results can be obtained, except in the large hypertrophied ones. All of the procedures require special training, and all have certain technical difficulties.

Before any procedure can be attempted, Alcock's criteria should be followed: 1) Establish adequate drainage of the bladder, if necessary, either by indwelling catheter or suprapubic cystotomy, 2) stabilization of function of the kidneys so that you have a normal or as near normal as possible excretion of the nitrogenous waste products (this can be determined by the NPN content of the blood), and 3) stabilization of the cardiovascular system of the patient. When these are met, then you should have a low morbidity and mortality. I know that the authors have been following this criteria, and all urologists start having it drummed into them from the beginning of their training and are thereafter constantly reminded of it.

Let us briefly review the deaths in this series. Thirty-nine deaths occurred in 100 consecutive operations, giving a mortality of 3.9 per cent. What other surgical procedure that you can perform on patients of this age group has such a low death rate? Frankly I can think of none. That rate is the same in other parts of the country. The authors have assumed that any cause of death is a postoperative one, whether related to the original condition or not. They are to be commended for their honesty. In reviewing the causes from one viewpoint, you could say that sixteen were due to the original condition, thus giving a rate of 1.6 per cent, and from another view you could say that only 10 deaths could be claimed, thus giving a rate of 1 per cent. But in dealing with surgical conditions, we should consider any cause of death as due to that condition, if we are to be honest with ourselves, as the authors have been.

We should not look upon surgery for prostatism with fear, as so many do, but look upon it as one that has a low morbidity and mortality, gives relief and comfort, and enables the individual to live a useful life.

Dr. Lloyd Deddens (Jackson)—I am sure that after listening to Dr. Ainsworth's paper and the discussions by Dr. Ramsey and Dr. Murray that there can be no doubt in your minds that transurethral prostatectomy, or transurethral resection as it is commonly known, must be a part of the armamentarium of the urologist and that the days of the procedure as applied to only the small gland is a thing of the past.

When we consider that we are dealing with an age group in which the cardiac and renal systems are invariably attended by the vascular changes of hypertension and arteriosclerosis the mortality rate of 3.7 per cent seems the more remarkable. Hugh Cabot in 1936 wrote, "Great age is a serious complication. Whereas the mortality between sixty and seventy is about the same as between fifty and sixty, after seventy-five the mortality of all procedures increases rapidly, and between eighty and ninety is five to six times as great as between sixty and seventy years." However, Emmett of the Mayo Clinic reported a mortality rate of 2.6 per cent in 345 patients eighty years or more. This well illustrates that transurethral resection is tolerated almost as well by the aged as by the younger man.

I hope that no one is inferring because of the lessened mortality, the decreased morbidity and the much earlier ambulation of these patients that transurethral surgery is a "minor" procedure as compared with the other methods of prostatectomy. It would be quite amiss not to mention the role of the sulfonamides, and the antibiotics to prevent infection, proper study of the blood chemistry and the roll of fluids and blood transfusions to fortify these patients and to prevent circulatory collapse. Another factor in the decreased mortality of this procedure is the mastering of a difficult procedure by the operator as shown by the Mercier report on 900 cases of transurethral resection. In the first twenty-five cases his mortality rate was 32 per cent, whereas in his last 400 cases it was 0.7 per cent.

The Thompson resectoscope which is a cold cutting instrument was used in the last 615 cases of this series presented by Dr. Ainsworth. We feel that there is less charring of tissue with consequently less sloughing of the resected area, hence a less area for toxic absorption, and quicker healing with a much earlier return of the urine to normal postoperatively.

We are invariably asked by these patients, particularly those in the fifth and sixth decades and who are still sexually active, what affect removal of this gland will have on their libido. Provided nature has not already intervened, or has made inroads into this phase of his life, no changes will be affected by procedure and he may carry on as actively as he desires.

Another question which is often asked is, "What are my chances of developing cancer after this operation?" In over 75 per cent of the cases the carcinoma begins in the posterior lobe and consequently does not produce symptoms until it has extended into the lateral and median lobes. The only procedure on the prostate gland in which the posterior lobe is removed is a radical perineal prostatectomy, therefore there can be no guarantee that these people will not develop carcinoma. In the remaining 25 per cent the cancer may orginate in the obstructing lobes—but, however, when a total transurethral prostatectomy with removal of these lobes is done the chances of developing carcinoma are proportionately decreased. However, carcinoma of the prostate gland is probably the most insidious affliction of any portion of the body, and the alarming increase in the death rate from cancer finds a large number arising from this gland. It is roughly estimated that the incidence of cancer of the prostate is as high as eight million in the United States. It has repeatedly been emphasized that no physical examination is complete, particularly in men over 50 years of age, without a rectal examination. And again I exhort you to include this in your examinations.

A work of caution is in order here in treating these men who present symptoms of male climacteric. Care should be exercised in giving these men androgens. If they are used frequent prostatic examinations should be made to detect any areas of beginning malignancy and the drug discontinued.

Streptomycin—Current Evaluation*

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The purpose of this paper is to present pertinent conclusions reached after treatment of forty-seven patients with streptomycin. These observations extend over a period of eighteen months. The classification of patients treated included all stages of the disease with regard to pulmonary extension. Of the types of tuberculosis treated, the following represents a breakdown of all cases:

I. Pulmonary
- a) Laryngeal, 8 cases.
- b) Tracheo-bronchial.
  1. With ulceration, 3 cases.
  2. With stenosis, 6 cases.
- c) Exudative Parenchymal, 12 cases.
- d) Fibro-caseous, parenchymal, 8 cases.

Giving a total of 37 representing phases of pulmonary pathology.

II. Glandular—3 cases.
III. Gastro-Intestinal—3 cases.
IV. Genito-Urinary—2 cases.
IV. Genito-Urinary—2 cases.
V. Meningitis—2 cases.

All cases had regular laboratory studies including N.P.N., CBC, urinalysis, sputum series, bronchoscopy where indicated and serial roentgenograms.

Dosage and Routes of Administration

Dosage ranged from 2.25 Gm. daily in the initial phase of this study through 1.75 Gm. to the present 1.0 Gm. a day. Route of administration primarily was intramuscular; 0.25 Gm. every six hours. In laryngeal and tracheobronchial disease, aersol administration was used in three 20-minute inhalations daily utilizing 0.5 Gm. per 24 hours.

Indications: 1. Minimal and moderately advanced cases with a pronounced exudative component. As a rule these cases had at least eight weeks of bed rest and still showing progression of non-stabilization, were put on streptomycin.

2. Laryngo-Tracheo-Bronchial Disease:

As mentioned in the original classification, lesions ranging from nodules to actual ulcers on the vocal cords, epiglottis and arytenoid cartilages to ulceration and stenosis in the bronchial tree, were included in this group.

3. Preparation for Thoracoplasty:

Included here are cases which had an unstabile lesion contralateral to the side contemplated for surgery.

4. Glandular Tuberculosis:

Cases of inguinal adenopathy with sinus formation.

5. Post-Hemorrhagic:

As recommended by Allison and Nillson for control of hemorrhagic spreads.

6. Wound Infections:

Breakdown post-operatively particularly of thoracoplasty operation.

7. Acute "spread" (Dissemination).

8. Gastro-Intestinal; Genito-Urinary.

Contraindications:

Generally speaking individuals over forty years of age who develop severe ataxia after a relatively short period of treatment with streptomycin. Markedly elevated non-protein nitrogen, exfoliative dermatitis. Cases displaying marked conjunctivitis during treatment, had best be discontinued. Fisher describes two cases of aplastic anemia, one fatal; however the transient eosinophilia usually noted in the majority of cases can be disregarded.

What Constitutes a Course?

The original work done elsewhere with streptomycin set a dosage of 1.8 Gm. daily for 120 days, or approximately 200 Gm. In the cases treated in this series, courses varied from 100.0 Gm. to 250.0 Gm. The question of repetitive courses of streptomycin will be discussed elsewhere.

Results:

In evaluating what may be termed, "Results," three factors must be considered: 1. The degree of advancement of the disease; 2. The type of disease, i. e. laryngeal, gastrointestinal, etc. 3. Immediate end in view.

With reference to factor one, we can state categorically, that in minimal, exudative types of lesions and in moderately advanced disease with a pronounced exudative component, results are comparable to those obtained in the most intensive surveys. Marked roentgenographic resorption, stabilization of lesions and clinical improvement was the rule in these cases. The 40 per cent sputum conversions obtained by Barnwell was approximated here with 35 per cent conversions.

In far advanced progressive disease, results were uniformly poor as was anticipated.

Factor Two: Type of disease.

All laryngeal cases showed objective improvement[8]. In several instances, the most distressing dysphagias accompanied by epiglottic and cord ulcers cleared completely.

(These cases uniformly had aerosol and parenteral treatment). Previously, this type of case could only be treated by endoscopic application of 35 per cent silver nitrate, or similar caustics.

Every tuberculosis enteritis[3] case had subjective and objective improvement, that is, stools diminished from six and ten daily to one and two evacuations. Increase in appetite and weight-gains were concomitant. These were cases whose pulmonary disease could be classified as moderately advanced. Two cases of tuberculous sinus due to wound infection, and two cases of inguinal adenopathy with sinus healed completely. Two cases of genito-urinary disease responded satisfactorily symptomatically and clinically.

Factor Three: Immediate end in view.

Some cases[3] were given streptomycin to control a non-stabile contralateral side when thoracoplasty was contemplated. Five cases were "covered," by streptomycin throughout the course of surgery. Again results in this category were definitely satisfactory.

A point not alien to this discussion is the matter of "resistance" of the strain of the mycobacterium to streptomycin. D'Esopo and Steinhaus found that 18 per cent in their series showed definite "resistance" (to 15 micrograms per cc. in culture) at the end of four weeks. The important point to be noted is that at the end of eight weeks the resistance mounted to 44 per cent of their series. Some apparent contradictions of the results to be expected in resistant cases were listed by these workers. These contradictions do not belie the importance of the increase in resistance at eight weeks and the uniformly poor results which they found in the resistant cases which were followed. Pitkin et al. found that second courses of treatment in three cases with resistant organisms were disappointing. It is our considered opinion that eight weeks' intensive treatment with streptomycin in exudative cases, not doing well, is in order, since resistance does not increase markedly before the expiration of that period.

In any discussion, emphasis on the suppressive defect of streptomycin on the organism should be made. Shamaskin believes it to be the most "potent therapeutic agent thus far available, one that is capable of inhibiting the growth of the tubercle bacillus inside the human host."

As indicated by the forensic nature of this paper, a repetition of case studies and statistics differing in no wise from antecedent workers was not intended; but rather an evaluation of the place of streptomycin. It is therefore the opinion of the writer that close adherence to fundamentals of treatment with streptomycin will result in its remaining as an addition to the armamentarium in the treatment of exudative lesions of tuberculosis. It supplants no treatment where indicated and should not be abused either in sanatoria or elsewhere.

All in all, the best results can be anticipated in exudative lesions predominantly, showing progression or remaining stationary on bed rest. It is of definite value in the types of cases illustrated in this paper.

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Fractures and Other Traumas American College of Surgeons*

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(Guest Editorial)

It is pleasing to see a revival of interest in the program of the College of Surgeons, in the state of Mississippi, in the field of the surgery of trauma.

Originally the activities of the Committee were limited to the diffusion of information with reference to transportation of the injured, and first aid in fractures.

The Committee, in cooperation with the Red Cross, sought to have the personnel of industrial plants, firemen, policemen, ambulance attendants, attendants at highway stations, and medical students trained in the application of traction splints for injuries to the upper and lower extremities. To what extent this activity has been carried out in Mississippi, I am not aware.

If you do not have a state law in Mississippi requiring all ambulances to carry Keller halfring and Murray Jones splints, as well as a box containing necessary material for the application of traction splints, tourniquet, and first-aid packages, it may be worth while to see if such a law cannot be passed. In Louisiana we have such a law and in many other states this law is on the statute books. I fear that it is observed more often in the breach than in its application.

An effort has been made in cooperation with the Red Cross to have filling stations identified by a sign, indicating that they have equipment required by the College and the Red Cross for the application of splints, and first-aid.

Your committee can, by enthusiastic interest, have industrial plant personnel, firemen, and policemen, as well as the ambulance attendants, trained in the application of the splints. The College has specified certain minimum requirements with reference to the equipment of hospitals in regard to the management of fractures.

Since 1939 the functions of the Committee have been enlarged. It is now known as the Committee on Fractures and Other Traumas. Minimum requirements are being prepared with reference to hospital equipment in the handling of all types of traumas.

Since the majority of cases are handled by general practitioners, it is desirable that hospitals and the Committee make efforts to devise means by which fundamental principles in the management of all forms of trauma may be widely diffused.

We believe that the Committee can stimulate interest by panel discussions and by frequent meetings in hospitals devoted to various forms of trauma. This has been done with tuberculosis, cancer, and prevention of infant mortality.

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*Delivered at the Mississippi Chapter of the American College of Surgeons, September 19, 1948.

We hope that the committee can translate into definite action a program for training of interns and residents in the surgery of trauma. The work of this committee may well be considered as preventive medicine. In these days of rapid transportation and the incidence of sudden death on our highways, the work as here sponsored should be welcomed by all.

The Committee can obtain the cooperation of the community as a whole by addressing various civic clubs, such as the Rotary, the Lions, the Kiwanis, women's clubs, and parent-teacher organizations.

If the public can be made to appreciate that the work we are engaged in is preventive medicine, their cooperation will be whole-hearted.

It is particularly important to stimulate interest in the results which are being obtained in the hospital by conferences on the subject of trauma, just as we have our clinico-pathological conferences and cancer clinics.

Your hearty cooperation in this work I am sure will redound to the benefit of the people of Mississippi, the profession as a whole, and will increase the value which is placed upon the activities of the American College of Surgeons.

Workmen's Compensation Act of Mississippi*

HON. PORTER W. PETEET
Greenwood, Miss.

The principle of the workmen's compensation acts originated in Europe, Germany passing the first of such laws in 1884. From there it spread to England in 1906, with the United States following suit in 1915 when ten of our states passed such legislation. Mississippi was the last of the states to enact such legislation, the 1948 session of the legislature passing a workmen's compensation act which will become effective January 1, 1949.

Without compensation laws, an employee who is killed or injured while engaging in his employment could recover only when he could establish negligence on the part of his employer. The laws pertaining to negligence received many refinements in the courts and the legislature, but the result was often a suit by the employee against the employer in which the employee had quite a difficult task to establish negligence, but when once established the employer found quite a large judgment given against him. Under the compensation laws, every worker who is killed or injured while engaged in an employment coming within the provisions of the compensation laws receives compensation, regardless of fault or negligence on the part of the employer. The employer and employee have exchanged the indeterminate liability under the old laws for certain payment in limited amounts under the compensation laws.

Under the philosophy of the workmen's compensation acts, injured and deaths to workmen are no longer approached from the viewpoint of fault or negligence, but are now regarded as a usual and incidental part of industry, the cost of which is to be borne by the industry, along with other costs such as labor, power, depreciation, transportation and such. Such cost will enter into the cost of production and will be passed on to the consumer.

The Mississippi Workmen's Compensation Act is applicable to all businesses having in service eight or more workmen regularly employed. Exceptions are made, however, for nonprofit charitable, fraternal, cultural or religious corporations or associations; also domestic servants, farmers and farm labor, although commercial processing of agricultural commodities is included. Likewise excepted from the Mississippi Act are the businesses of transportation and maritime employment which are already covered by the Federal Act. However, those excepted may voluntarily come under the provisions of the Mississippi Act if they so desire.

Compensation is to be paid for any disability or death of an employee from injury arising out of and in the course of employment, without regard to fault as to the cause of the injury. However, if the injury or death is caused by the employee's intoxication or by his wilfull intention to kill or injure himself or another, no compensation is to be paid. The employer must secure to the employee the payment of compensation at the rates provided. This is the extent of the employer's liability unless he fails to secure such payment, in which case the employee can either resort to his common law remedies and sue on the basis of negligence, or he can claim compensation under the Act.

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*Read before the Delta Medical Society semi-annual meeting, Greenwood, Miss., Oct. 15, 1948.

Let us take an example to see how this Act will operate. A clerk in a store with more than eight employees is leaning against a showcase when the glass breaks and the first finger is severed. Notice is immediately given to the proper person in the store organization, and the employer immediately furnishes medical attention, including nurse and hospital service if required. The employer must report this accident to the Workmen's Compensation Commission within ten days after receiving notice of the accident. Fourteen days after the occurrence, the employer makes payment of the first two weeks of compensation, and makes payment semi-monthly thereafter for the time the employee is temporarily totally disabled, and then for an additional period of thirty-five weeks, that being the period of time specified by the Mississippi Act as the compensation for the loss of a first finger. This compensation is paid at the rate of 66 2/3 per cent of the average weekly wage for the preceding fifty-two weeks, the maximum compensation, however, being limited to $25 per week, and the minimum being fixed at $7 per week.

If the injury is one involving loss of time of less than five days, no compensation is paid, although medical treatment is provided by the employer. For a period of loss of from five to fourteen days, payment is made only for the time lost, less five days.

The law requires the posting of notices by the employer, and also requires various notices and information to be given by the employer to the Commission.

Should there be a contest by the employer of the employee's right to be paid compensation, or the amount to be paid, provision is made for hearings before the Commission and for resort to the courts.

The Act specifies payment for permanent total disability for a period of 450 weeks or a maximum of $8,600.00, whichever results in the lesser payment. Temporary total disability is payable during the time of such disability, not to exceed the limitations of 450 weeks or $8,600.00. Permanent partial disability is specifically provided for, to be paid for the periods specified, following the period of temporary total disability. For example, for loss of an arm, after being paid for the time of temporary total disability, provision is made for an additional 200 weeks of compensation. For loss of leg, 175 weeks compensation is to be paid. Temporary partial disability is compensated for on the basis of time lost.

There are several provisions of the Act which are of especial interest to members of the medical profession. The employer is required to furnish such medical, surgical and other attendance or treatment, nurse and hospital service, medicine, crutches and apparatus, for such period as the nature of the injury or the process of recovery may require. It will be noted that there are no limitations on the gross sum or the period of time during which these services are to be furnished and paid for by the employer. If the employer fails to provide such services, the employee must specifically request the employer to furnish them, after which the employer must either furnish such services or be liable for their cost. Such request by the employee is not necessary if the nature of the injury required the treatment and services given and the employer or his superintendent or foreman had knowledge of such injury and neglected to provide the treatment and services. On the part of the physician, when services are rendered at the request of the employer, the liability of the employer for payment to the physicians is certain. However, when rendered the request of the employee, after request by the employee to the employer, the physician must furnish to the employer and to the Commission, within twenty days following the first treatment, a report of the injury and the treatment. This report is made on a form prescribed by the Commission. Unless this report is made, the Commission will not assess against the employer the cost of the treatment to the employee. However, the Commission may excuse the failure by the physicians to file this notice within the twenty days.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

ALL ABOARD!

Again we have a fine program waiting at the Mid-South at the Peabody Hotel. This postgraduate assembly will give a review of the essentials in medicine and surgery in this four-day course. A fine display of exhibits will be very beneficial. Meeting old friends and swapping medical information will be very valuable. The fine medical atmosphere in Memphis and the cordial Southern handshake will inspire to greater effort. This assembly has largely shown the way in the United States. It does not carry a lot of sideshows, puts it all on the center stage, and in this way gives a broadening influence to one and all. It is good for the specialist and it is good for the practitioner. More and more we are persuaded that these two groups need to come together and to understand each other. Make your plans to go for the full four days if possible. It will be good for you and most helpful to the people you serve.

VA HOSPITALS

In 1947 a total of seventy-six new VA hospitals were authorized at a cost of 491 million dollars. In 1948 another fourteen hospitals were authorized at a cost of 231 millions. About half of these are still in the planning stage. It is now announced that twenty-four of them have been eliminated from the builder program, including the one at Tupelo, and fourteen others are to be reduced in size. This may be going a bit stronger, but the Hoover Commission for Government Reorganization found that of the 104,000 VA hospital beds at that time, that only 51,000 beds would likely be utilized and that 67 per cent of the beds then occupied were filled with veterans whose disabilities were not the result of war service. It would seem that the practical and the economical plan would be to let the simpler cases of sickness of veterans go to the home doctor and to the home hospital. This plan worked well under the delivery plan for wives of privates up to sergeants during the war. Uncle Sam reaches for recruits in war to the most backwoods places. In the case of the veteran's wife during the war the patient was allowed to choose her doctor and her hospital and the government paid the bill. The fees allowed were not enough perhaps for the larger institution, but were more than the country doctor had been receiving. The average veteran would prefer to go to his own doctor and a large percentage can be just as well served by him. It would cost the government no more to pay the bills in full in our opinion than to continue to construct very costly hospitals and staff them. A plan like this would be a great help in giving more life to the community hospital and more income to the country doctor, thereby helping to keep medical service at home and serving a great social and economical problem for the small town and rural community. We are sure that the veterans hospitals are serving well, but for some reason we find many veterans who do not like to go to these hospitals. Of course all hospitals are growing more expensive with the rising high costs while the atmosphere grows cooler. It needs warming and humanizing and personalizing and the serious problem of socialized medicine would have a strong tendency to melt away like the fog at the rising of the sun. Our hospital problem has quite a definite relation to socialized medicine.

THE TWENTY-FIVE-DOLLAR ASSESSMENT OF THE A.M.A.

Today our nation is sorely beset because of industrial strife, social unrest, economic uncertainty and an ever expanding paternalism.

Among these disturbing trends is the socialization of our great profession. The probability of legislation being enacted by the present Congress to implement such a false ideology is increased because of the composition of the eighty-first congress. These men, elected by overwhelming votes, feel that they have more or less a mandate of the people in regard to the character of laws to be passed, whereas, the Congress and the President were not chosen by a majority of the voters but rather because a majority of the electorate refrained from casting their vote.

Regardless of what the absent voters may think, the present Congress is disposed to follow the lead of the President and place on the statute book a law that will be very inimical to the welfare of the American people, this law being directed towards the socialization of our life vocation.

The American Medical Association with its assessment of twenty-five dollars for every member has a very distinct plan to follow and this concerns the education of the "grass roots" area as to what American medicine has done, what it proposes to do, and what a detrimental effect the ideas of the Security Administration would have upon the patient as well as the doctor.

A recent telegram from the National Physicians' Committee for the Extension of Medical Service, contained this sentence:

> "Since Planning Committee of A.M.A., whose responsibility is levying and directing expenditures of $25 per member assessment, has requested National Physicians' Committee to increase scope of its activities, believe Mississippi physicians should understand need to amplify support of NPC in addition to A.M.A., Assessment."

Therefore, it is the earnest hope that every physician in Mississippi will answer the call for the assessment and also support the N.P.C.

Remember that the National Physicians' Committee has the endorsement of the American Medical Association and will be the "front" for organized medicine in preventing the passage of those laws that so vitally affect us in an adverse way.

J. P. Wall, M. D., Delegate to
A.M.A. House of Delegates

News and Comment

BLUE CROSS

Non-profit Blue Cross Service Plans enrolled 667,913 new members during the third quarter of 1948 bringing total Blue Cross membership in the United States and Canada to 31,841,136 persons.

The Blue Cross Plan in Toronto, Canada, achieved the largest numerical growth during the third quarter of 1948 reporting a membership gain of 83,108; New York City and Chicago followed with 69,688 and 54,853 new members respectively. Largest percentagewise growth was achieved by Plans headquartered in Jackson, Mississippi; Columbus, Georgia; Greenville, South Carolina; and Albuquerque, New Mexico, each of which reported membership increases of more than 11 per cent over second quarter enrollment.

ANNOUNCEMENTS

Jack Greenfield, A.B., F.A.C.S., Am. Bd. Surg., announces the opening of his office at 1167 Madison Avenue, Memphis 4, Tennessee. Practice limited to general and vascular surgery.

William C. Quinn, M. D., announces the opening of offices for the practice of general surgery, 745 Carlisle Street, opposite Baptist Hospital, Jackson, Mississippi.

Carl D. Marsh, A.B., M.D., F.A.C.A., and David W. Goltman, A.B., M.D., F.A.A.A., announce their association in the practice of allergy and the removal of their offices to 36 South Bellevue, Memphis, Tennessee.

DR. SEALE HARRIS' WORK MEMORIALIZED

More than 250 persons, including a number of distinguished visitors from several states, heard members of the medical profession pay tribute to Birmingham's Dr. Seale Harris December 17 at the Alabama Medical College auditorium.

A portrait of Dr. Harris was presented to the University of Alabama Medical School by doctors of the state. Dr. Harris is professor emeritus of the medical college. Presentation was made by Dr. Lon W. Grove, associate professor of surgery, Emory University, and former student of Dr. Harris.

Citing Dr. Harris as "physician, investigator and medical historian," Dr. Grove recalled "in 1941 the second citation of merit ever to be conferred by the Medical Association of Alabama was given to Dr. Harris, who also was cited by Gen. Pershing during the First World War."

Dr. Grove commented on the monumental contribution of the discovery by Dr. Harris of hyperinsulinism, a disease included in every textbook on medicine in the world, saying "As long as civilization lasts the name of Seale Harris will be remembered."

Dr. Harris was one of the founders of the Southern Medical Association and its former president; former president of Alabama and Jefferson County associations, also.

Dr. Roy Kracke, accepting the portrait for the college, declared: "This portrait of one of the great doctors of our times will be placed on the walls of this institution where it will remain for generations to come, to serve as an inspiration to each student to become a great man of medicine, a great teacher, scientist, author and to contribute to his country and society. I know of no man our students could better emulate than Dr. Seale Harris. Any man who has made such an important contribution as to be called the discoverer of hyperinsulinism has, indeed, left his mark on scientific medicine."

Dr. John Gallalee, president of the University of Alabama, paid tribute to Dr. Harris as physician and man, as did Dr. M. Y. Dabney, chairman of the portrait committee, who presided. Dr. Dabney called Dr. Harris "one of the best Christians I've ever known." Little Jodie Keegan, granddaughter of Dr. Harris, unveiled the portrait, and short talks were made by Dr. Wilbur Salter, Anniston, and Dr. Gilbert Douglas, both former students of Dr. Harris. The portrait was painted by Milner Benedict.

DR. SANDERS ELECTED PRESIDENT WESTERN SURGICAL ASSOCIATION

Dr. R. L. Sanders was recently elected president of the Western Surgical Association. Dr. Sanders is head of the Sanders and Sanders Clinic in Memphis, professor of surgery at the University of Tennessee, College of Medicine, and president of the staff at the Baptist Hospital in Memphis. Dr. Sanders has been the only member of the Western Surgical Association until recently when Dr. W. H. Parsons of Vicksburg and Dr. Boyd of the Campbell Clinic were admitted. Dr. Sanders is a member of the board of governors of the American

College of Surgeons, the American Medical Association, and the Southern Surgical Association. He is also an honorary fellow of the International College of Surgeons. He is chairman of the Medical and Scientific Committee of the Tennessee division of American Cancer Society. Not so long ago in London he was named a fellow of the International Society of Surgeons. He is a diplomate of the founders group of the American Board of Surgery, a member of the Council of the Southern Medical Association. He is a past president of the Southeastern Surgical Congress and of the Mayo Clinic Alumni Association. Dr. Sanders is an able teacher and surgeon, and exercises great power in almost every phase of organized medicine in this nation.

METHOD OF SELECTING OUTSTANDING GENERAL PRACTITIONER FOR A.M.A. AWARD

You will recall that the first award of this honor went to Dr. Sudan of Colorado and last month the second one was to Dr. Pressly of South Carolina.

Every medical society in Mississippi should choose its candidate and submit his name to the House of Delegates of the Mississippi State Medical Association.

The procedure to follow is:

1. Each county medical society (or group of counties) shall name the candidate of its choice as the outstanding general practitioner for the year within its jurisdiction, basing its selection on nominations and recommendations from any responsible source, lay or professional.
2. The name of each candidate so chosen by a county medical society (or group of counties), with all pertinent data, including recommendations of lay groups and individuals, shall be submitted by the county medical society (or group of counties) to the state medical society of which it is a component part.
3. Each state medical society through whatever agency each may designate, shall select from among the candidates submitted by its component medical societies one name to be declared the outstanding general practitioner within that state.
4. The candidate so selected at the state level shall be the sole candidate from that state, and his or her name, with all pertinent supporting data, shall be submitted to the Board of Trustees of the American Medical Association.
5. The Board of Trustees of the American Medical Association shall select from the names submitted by the state societies the names of three persons, these names to be submitted in turn to the House of Delegates of the American Medical Association, which shall select one name to be declared the outstanding general practitioner of the United States for the year.
6. Any state society desiring to do so may establish and confer a suitable award with fitting public ceremonies on the physician it has named as the outstanding general practitioner of that state for the year.

COMMISSION ON HOSPITAL CARE

Mr. J. O. Slaughter, Chairman of the Mississippi Commission on Hospital Care, announced that at the regular meeting held in Jackson on January 10, all officers of the Commission on Hospital Care were reelected for the regular term of one year, Mr. J. O. Slaughter of Columbus was reelected chairman; Dr. Henry Boswell of Sanatorium was elected vice chairman; Mr. Owen Cooper was reelected secretary; and Dr. D. V. Galloway was reelected executive director. The other members of the Commission are: Dr. Felix J. Underwood of Jackson, Mr. Jack M. Montgomery of Inverness, Dr. W. Lawson Shackelford of Whitfield and Mr. Carl Blomquist of Port Gibson, Mississippi.

The Commission also reviewed the report of the Hospital Licensing Council, which is now studying minimum standards and regulations under the State Hospital Licensing Law. The Chairman of the Commission is the Acting Chairman of the Council, and it is composed of:

Dr. K. Avent, of Grenada; Dr. R. C. Fields, of Centreville; Dr. W. H. Anderson, of Booneville; Mr. John Gill, of Vicksburg; Mr. R. M. Castle, of Meredian; Mayor John R. Watts, of Pascagoula; Mrs. George Lampton, of Columbia; Monsignor Joseph Brunini, of Jackson.

The next meeting of the Commission was not set, but the regular meeting date would be February 14, 1949.

Dr. William Lowry Pressly

The Gold Medal of the American Medical Association for exceptional service by a general practitioner was awarded by the House of Delegates of the American Medical Association at its Interim Session at St. Louis on November 30-December 3 to Dr. William Lowry Pressly of Due West, South Carolina. Dr. Pessly received a good majority on the first ballot, and the Gold Medal was presented to him at a public session of the American Medical Association in St. Louis on Thursday evening, December 2. He was given the honorary degree of Doctor of Laws by his alma mater, Erskine College, during the past October, for his "great humanitarian work. A testimonial dinner has recently been given him by his community in the Erskine College dining hall in Due West. A bronze plaque is to be placed there in his honor.

Dr. Pressly was born in Due West in 1887. He received his academic education at Erskine College there and his medical degree at Emory University School of Medicine in Atlanta. He earned money for his medical education by playing professional baseball for several years.

He has practiced in Due West for thirty-two years. He has been president of his county, district, and state medical associations, and for ten years a member of the South Carolina State Board of Health. He is a member of its executive committee, and was state chairman of the Procurement and Assignment Division of the Selective Service of South Carolina in World War II. He was second chairman of the Section on General Practice of the Southern Medical Association, and is now and has been for several years a member of the Council of the Association. He is a member of the Executive Committee of the Council.

He has built a modern clinic in Due West, as well as contributing to the establishment of public health measures, and in every way has been a useful citizen to his community. Rural practice will be easier for today's medical graduates, and rural health and wealth improved, because of the pioneer work of such men as William Lowry Pressly. It is good to know Dr. Buck Pressly, as he is fondly known, and to feel the warmth of his great personality. We commend the American Medical Association for thusly honoring this type of man. Mississippi has one in the person of Dr. W. L. Little, who was chosen by the state association as last year's candidate for the Gold Medal.

The National Foundation for Infantile Paralysis announces fellowships in the field of research, physical medicine and public health which are now available. Application may be made to the National Foundation at any time during the year. Selection of candidates will be made on a competitive basis by the Committee on Fellowships in Public Health.

Universities with approved Schools of Public Health are:

University of California, Berkeley, California; Columbia University, New York, New York; Harvard University, Boston, Massachusetts; Johns Hopkins University, Baltimore, Maryland; University of Michigan, Ann Arbor, Michigan; University of Minnesota, Minneapolis, Minnesota; University of North Carolina, Chapel Hill, North Carolina; Tulane University, New Orleans, Louisiana; Yale University, New Haven, Connecticut.

ADDITIONAL EXHIBITORS

Ayerst, McKenna and Harrison, Ltd., New York, New York.

Harrower Laboratories, Glendale, California.

H. J. Heinz Company, Memphis, Tennessee.

Kinney and Company, Columbus, Indiana.

M & L Dietetic Laboratories, Inc., Columbus, Ohio.

Ortho Pharmaceutical Corporation, Raritan, New Jersey.

Ritter Co., Inc., Rochester, New York.

The Smith-Dorsey Company, Lincoln, Nebraska.

The Upjohn Company, Kalamazoo, Michigan.

Atomic Energy Exhibit, American Chemical Society.

Coors-Lyon Oxygen Therapy Service, Memphis, Tenn.

DePuy Manufacturing Company, Warsaw, Indiana.

Hoffmann-LaRoche, Inc., Nutley, New Jersey.

Univ. of Tennessee, College of Medicine, Memphis, Tenn.

F. E. Young & Company, Chicago, Illinois.

IN MEMORIAM—1948

(The following resolutions were adopted by the Mississippi Public Health Association, December 8, 1948).

WHEREAS, "In the capricious urn of death, every name is shaken" and on November 8, 1948, the justly revered and worthily honored name of Dr. W. A. Evans, fell out of the urn after he had served well his fellow man for eighty-three years, three months, and three days, and he then was gently led by his Maker's hand into that land where the beauty of the rainbow never fades and where celestial stars forever reflect the glory of the great physician, and

WHEREAS, Life is a mission and the shaping of same is in our own hands, where it may be made a thing of shame or a creation of transcending beauty, and it can be correcly stated that Doctor Evans made of his life a creation of supreme beauty by virtue of superlative beneficial service to the children of men, and

WHEREAS, A contemporary, the revered Dr. G. S. Bryan of Amory, Mississippi, has written of Dr. Evans as follows: "Dr. Evans is a scion of pioneer and influential families. He was born in Marion, Alabama, on August 5, 1865 and was brought to Aberdeen, Mississippi, by his father and mother when he was very young. He grew to manhood there, attending the city schools of the city. He was a member of the first class to be graduated from the Old Agricultural and Mechanical College at Starkville in 1888. The same college conferred a Master's degree on him in 1888. He graduated from Tulane with a degree of M. D. in 1885. After graduating in medicine, he associated himself in practice with his father, Dr. W. A. Evans, Sr., at Aberdeen. The Board of Health of Mississippi employed him to assist them in their strenuous but successful effort to keep the state free from yellow fever in 1888 during the Jacksonville epidemic (the last serious menace the state had from this disease). Soon after that time, perhaps in 1890, he went to Chicago to do certain postgraduate work. At this time he attracted the attention of perhaps the greatest teacher of medicine and surgery of all time—namely Dr. J. B. Murphy. Possibly he had already dreamt dreams and seen visions of what his possibilities were. Be this as it may, under the patronage of Dr. Murphy and backed by his giant intellect and indomitable will, his advance in the field of his chosen branches of medical science was most phenomenal," and

WHEREAS, Dr. Evans in early manhood was led by ambition, "the glorious frailty of the noble mind" to move to Chicago, a larger field for a larger service, where with certain associates, in a short while he had acquired renown in the field of "chemical, bacteriological, and pathological work"; where dream after dream ensued and success after success followed his arduous efforts and he was hailed as a statesman by virtue of his most creditable championship of the man and the cause that would not have "humanity crucified on a cross of gold or see a crown of thorns pressed down on the brow of labor"; where he was nationally recognized as a writer and author by virtue of various manuscripts and by his "How to Keep Well" column of the *Chicago Tribune* for many years; where he served the University of Illinois for seventeen years as instructor and professor of pathology; where he masterfully held the chair of sanitary science in Northwestern University, Chicago, Illinois, for seventeen years; where he most helpfully served in safeguarding the people's health from 1907-1911 as Commissioner of Public Health for the city of Chicago; and his work was then honored when Tulane bestowed the honorary degree of D. D. L. (Doctor of Law) upon him in 1910, and when the University of Michigan bestowed the degree of D. P. H. (Doctor of Public Health) in 1911; and distinction, credit, fame, and renown followed by elevation to the presidency of the American Public Health Association, and broad acquisitions of medical knowledge which subsequently went to his people following research work in Rome, Italy, and Paris, France; and generosity and benevolence graced his name when he donated the greater portion of his medical library to the Mississippi State Department of Health, and his private library to his native Aberdeen, and

WHEREAS, Dr. Evans knew that "life is a journey, not a home; a road, not a city of habitation" and as he approached that journey's end on the road of life, he yielded to the human instinct to return at evening time to the paternal hearth, the rallying place of his affections, and he left Chicago and returned to Aberdeen, Mississippi, where, when life was young, he had planted the "tree of hope" and on his return he found it in full fruition; each branch bending with fruits of kindness and trust, health and happiness, not alone for those of his generation, but "for faces he hath not seen and yet unborn, who shall bless him," therefore

BE IT RESOLVED, That we exercise the Christian's faith in our valediction and sincerely say,

"Farewell, dear Voyageur—'twill not be long.
Your work is done—now may peace rest with thee.
Your kindly thoughts and deeds—they will live on.
This is not death—'tis immortality," and be it further

RESOLVED, That we cause to be entered into the permanent files of the Mississippi Public Health Association, a copy of these resolutions, that a copy be sent the nearest of kin of our deceased member, that a copy be sent to the *Mississippi Doctor*, and to the secular press of Mississippi for printing, that men may know we revere our illustrious dead who have given their lives that men everywhere may keep the lives they have loved with them a little healthier, a little happier, and a little longer.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

A NEW TREATMENT FOR DIAPER RASH, PRELIMINARY—Reuel A. Benson, Lawrence B. Slobody, Lois Lillick, Anthony Maffia and Norbert Sullivan, New York University Medical College. New York, N. Y., Journal of Pediatrics 31:369-74, October 1947.

"Diaper rash (ammonia dermatitis) is the most common skin condition encountered in infants. The lesions are characteristically erythematous or papulovesicular and may go on to ulceration. Ulceration of the external urinary meatus is particularly troublesome.

In 1921 Cooke demonstrated that the ordinary diaper rash is an ammonia dermatitis due to bacterial decomposition of urinary urea into free ammonia. The principal organism concerned is B. ammoniagenes, a saprophytic gram-positive bacillus which originates in the feces. Thus the prevention and treatment of ammonia dermatitis is dependent on inhibition of bacterial growth in the urine. This can be accomplished by the use of a nonvolatile antiseptic in the diaper itself.

Bichloride of mercury and boric acid have been widely used but are not wholly satisfactory. The results with para di-isobutyl-cresoxy-ethoxy-ethyl di-methyl benzyl ammonium chloride monohydrate (Diapene) warrant early report. This drug exhibited a bactericidal affect on B. ammoniagenes in vitro in dilutions up to 1:200,000. The safety of Diapene was established by standard patch tests on 200 infants. No irritant or allergic effects were noted.

Fifty infants with ammonia dermatitis were treated by impregnating their diapers with the drug. In 49 infants there was excellent clinical response within one week. The ammonia odor disappeared from the diapers immediately."

COMMENT: The subject of this paper is one that gives the physician a great deal of trouble and complaints from the mothers of these babies. The suggestions made in the paper are good; however I do not agree with the author in the suggestion that bichloride of mercury be used in a condition of this sort. My experience indicates that it will make the rash worse instead of better. Bathing with boric acid solution and the sprinkling of prickley heat powder will go a long ways toward alleviating the condition, and certainly in my opinion is much superior to the bichloride of mercury. The other suggestions are very good.

NEW FILM

The American Hospital Association is coöperating with RKO Pathe in the promotion of its new documentary, "Girls in White"—the most recent "This Is America" short film.

The RKO Pathe distributor in this area is J. R. Lamentia, 1418 Cleveland Ave., New Orleans 13, La., phone Raymond 1148.

State Board of Health

Felix J. Underwood, M. D.

PREVENTABLE DISEASE CONTROL

by A. L. Gray, M.D., Director

Acute Communicable Diseases

Unless the December incidence of diphtheria is unusually high, the state will wind up this year with the lowest number of cases in its entire history. Only 237 cases had been reported through November 26. In 1947, there were 355 cases.

Poliomyelitis has been unusually prevalent in the period since July 1. A total of 153 cases has been reported for the year of which 141 were reported since July 1 and 3 in November. This picture should promote cautious preparation for 1949. When compared to other pre-epidemic years, the number and monthly distribution of cases in 1948 indicate an epidemic year in 1949.

Typhus and undulant fever have shown a decline, there having been 37 and 57 cases respectively reported.

Liaison with Private Physicians

Recognizing the extreme importance of the private physician in preventable disease control, it is felt that better liaison between the physician and state and local health departments is fundamental in giving the public the protection it deserves and demands. Public health personnel needs to know more about the problems and needs of the private physicians. Conversely the private physicians can and will do more preventive medicine in private practice when they know the needs, aims, objectives, and methods of health departments.

To facilitate the delivery of better public health to the public by physicians and health departments, a professional liaison officer was employed as of July 1 who spends his entire time visiting private physicians and discussing with them the problems common to physicians and health departments. In the period covered by this report a total of 634 physicians have been visited in 34 counties. By the end of a year all of the physicians will have been visited. It is planned to continue this valuable liaison so that there will be a greater degree of coöperation in protecting the health of the public. A great majority of physicians visited have shown real interest and satisfaction in the public health program.

Epidemiologic Investigation

The epidemiologist and consultant nurse have continued their studies of all known and suspected cases of undulant fever, typhus fever, typhoid fever, and malaria coming to the attention of the division. Cases investigated were as follows:

	Suspects Investigated	*Found Positive*
Typhus fever	39	25
Undulant fever	38	36
Typhoid fever	17	13
Malaria	40	23

In addition to this, two outbreaks of gastroenteritis were studied in boarding schools.

Venereal Disease Control

As of July 1, the schedule of rapid treatment for syphilis in the rapid treatment centers was changed in line with simplification and effectiveness based on research findings over the nation. The schedule adopted as of July 1 consists of 600,000 units of penicillin daily for 6 days, giving a total dosage of 3,600 units in all early and late syphilis over 3 years of age. Those 3 years of age and under are given half the above dosage. No arsenic or bismuth is included in the new schedule, since these seem to add nothing to efficiency of therapy and caused some toxic manifestations. The product being used is penicillin in oil and wax, 300,000 units per cc. with the entire daily requirement being given in one injection. As of December, penicillin procaine will be substituted for penicillin in oil and wax, but given in the same dosage.

By the end of November, total admissions to rapid treatment centers had reached 76,737 since these centers started operation. Admissions from July 1 through October totaled

6,680 and for this calendar year 15,167. A large number of suspects with positive or doubtful serology found on mass surveys and otherwise are awaiting admission to rapid treatment centers until cotton is harvested.

Venereal disease education for the general public was greatly intensified in many areas. A series of instructive transcriptions relating to syphilis has been broadcast over several local radio stations. These transcriptions were prepared by Columbia University and the United States Public Health Service with nationally known commentators and radio actors presenting the material. For the past several months a 30-minute sound film on syphilis designed for negroes has been under production by this division. It has as its purpose a dynamic educational approach to the negro of the South and is already in great demand. A preview of the film was held on November 23. It was produced in the Mississippi Delta with local talent by Southern Educational Film Production Service, Incorporated.

A new syphilis case finding approach has been initiated with private physicians since July 1. Private physicians have been treating a large number of infectious cases of syphilis without due regard for investigation of these contacts. These cases and contacts continued to be the source of infection of the general population. This group of contacts is so important that a plan is now being initiated through which the State Board of Health pays private physicians for interviewing primary and secondary cases and transmitting the names of contacts to the State Board of Health. Many of the private physicians are now participating in this approach and express their approval of this method of epidemiological service.

Case finding of syphilis has been augmented by the mass blood survey approach on a county-wide basis through special grant of funds and personnel from the United States Public Health Service. Through this project four counties have been surveyed and another is almost completed. A total of 19,789 people have been tested of which 3,439 showed positive or doubtful serology. Comparing the findings in these surveys with previous indices of incidence of syphilis, it is becoming evident that syphilis has been reduced as much as 50 per cent in Mississippi since 1938.

Study of the incidence of syphilis in the prenatal patients under health department supervision in 1942 and in 1948 indicates that in this group the disease has declined by between 40 and 50 per cent in this six-year period. This comparative study is still in progress. If this disease is declining at this indicated rate, there is room for real optimism for the future.

Cancer Control

This program continued to be one of major importance as indicated by demands being made for diagnostic and treatment services through the Mississippi Division of the American Cancer Society. From July 1 through November 26, 542 cases were accepted for diagnostic and/or treatment service. Increase in request for service and a marked increase in hospital and clinic cost per patient have created a rather critical situation in regard to financing the service program. Limitation on services per case or the number of cases served, or reduction in cost per case must be seriously considered if there is to be continuity of the service program.

Lay education has been widely promoted with county groups by the health educator. All county units have been visited and through them much organized lay education is being done.

Tuberculosis Control

Tuberculosis control continued on an expanded scale with increasingly favorable results. In the period May through October a total of 141,691 films were processed and interpreted. Of these, 82,678 were for white people and 59,013 were for colored people. Of these numbers, 2,478 showed evidence of tuberculosis.

A most significant point in this report is that 749 previously unknown cases of tuberculosis were found through this x-ray program more than half of whom were active cases. It is probable that few of these would have ever been discovered in a remedial stage without the extension mass x-ray program through the mobile units and the x-ray program of local health departments. We are making real inroads on tuberculosis which will increase the rate of decline of this disease.

Another mobile 70 mm. photofluorographic unit was put into operation recently bringing to four, the total number in operation. It is felt that these four units will be adequate for the needs. These four mobile units did partial or complete surveys in 25 counties, since the last report was presented. Many cases found through these units have been minimal cases in young people. To these individuals, the tuberculosis control program means the difference between life and death.

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MEDICAL AUXILIARY ELECTS NEW OFFICERS

Names of new officers of the South Mississippi Medical auxiliary, elected at a meeting in the home of Dr. and Mrs. C. D. Beech in Laurel will assume their duties at the next meeting which will be held in March.

New officials are: Mrs. Eugene Busby of Hattiesburg, president; Mrs. Frank Ramsey of Laurel, president-elect; Mrs. Harry Fridge of Hattiesburg, vice president; Mrs. C. C. Hightower, Jr., of Hattiesburg, secretary; and Mrs. Addison T. Tatum of Hattiesburg, treasurer.

Prior to the meeting in the Beech home, the auxiliary met with the Medical Society for dinner at the Laurel Country Club.

A clever contest, "The Night Before Christmas" was led by Mrs. J. R. Fatheree. Mrs. Eugene Busby won high score.

Mrs. Frank Ramsey introduced Miss Louise Phillips who read, "How Come Christmas?" by Roark Bradford. The group, accompanied by Mrs. H. Gwinn, sang "It Came Upon the Midnight Clear."

Christmas decorations were used at the Country Club and throughout the Beech home. Mrs. F. L. Risher and Mrs. Busby poured coffee and tea from an especially decorated table. Party sandwiches and candy also were served.

Hostesses with Mrs. Beech were Mrs. Frank Ramsey, Mrs. Neil Fortus, Mrs. B. McLain and Mrs. L. K. Oates.

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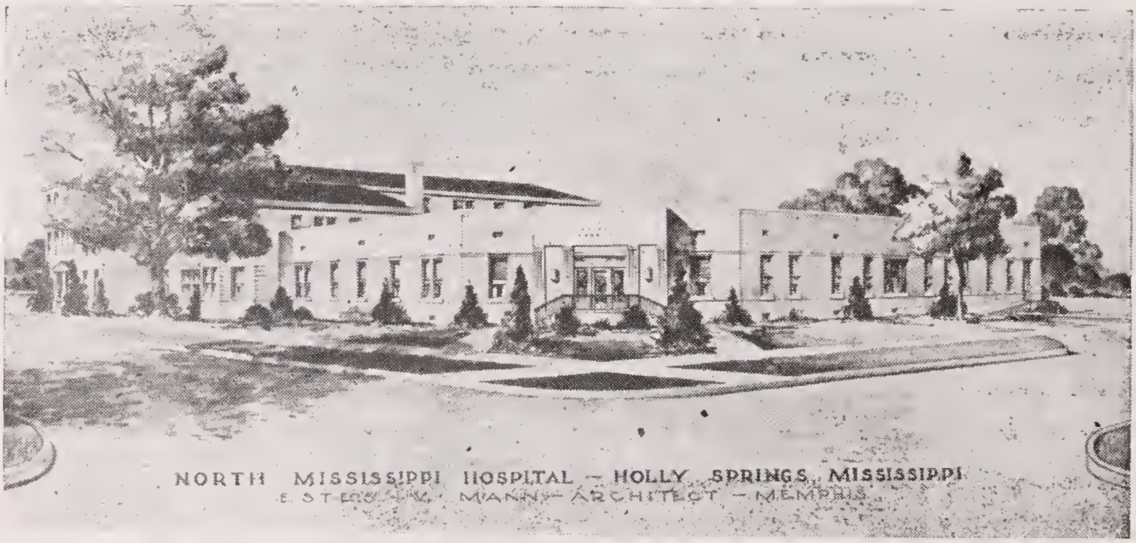
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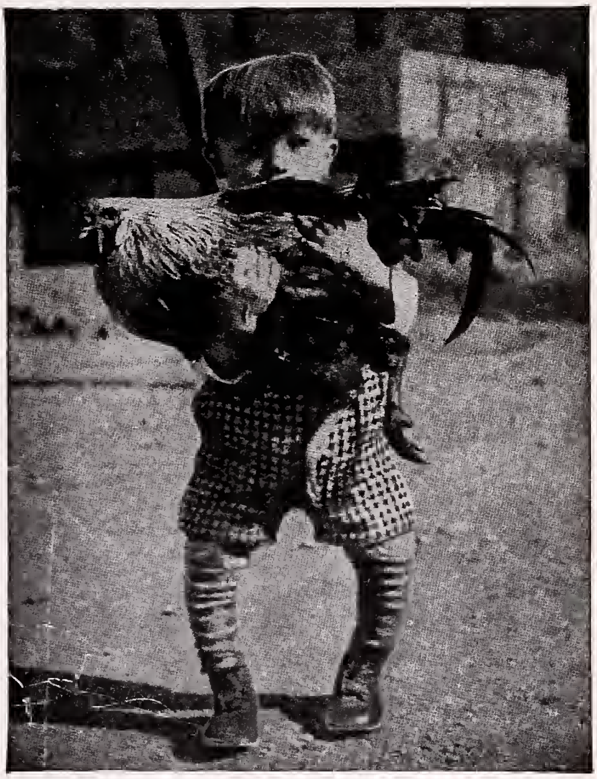

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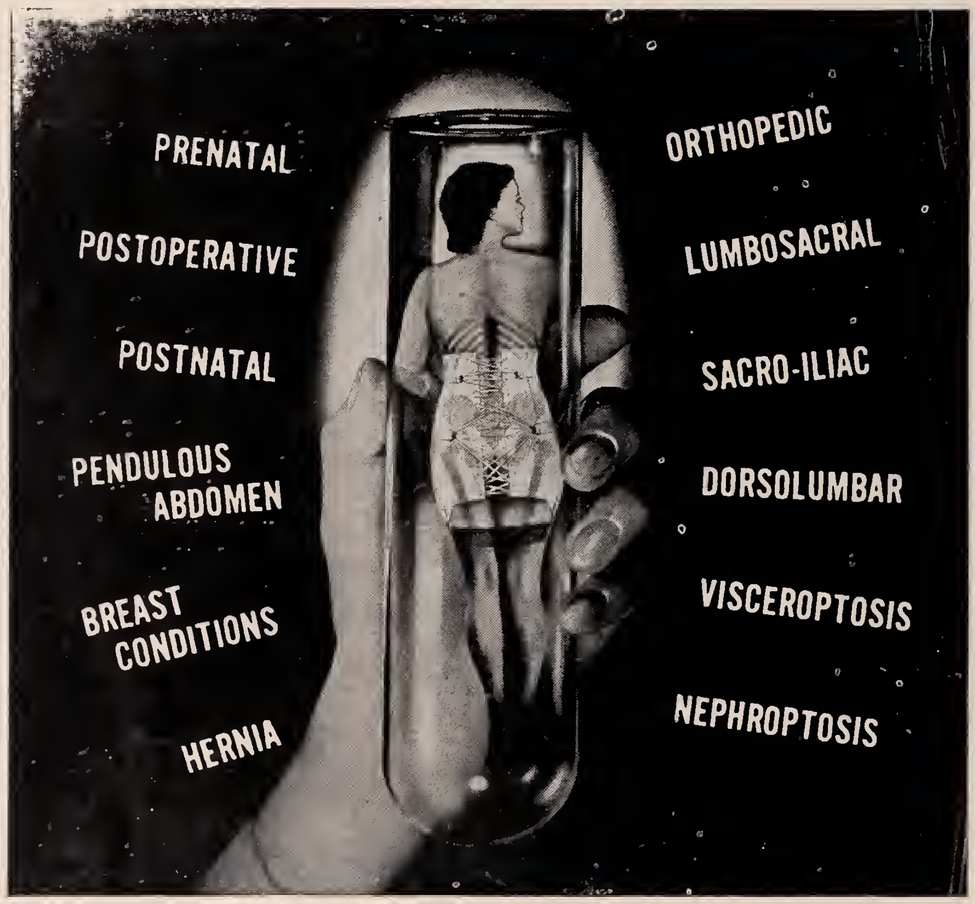
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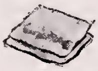
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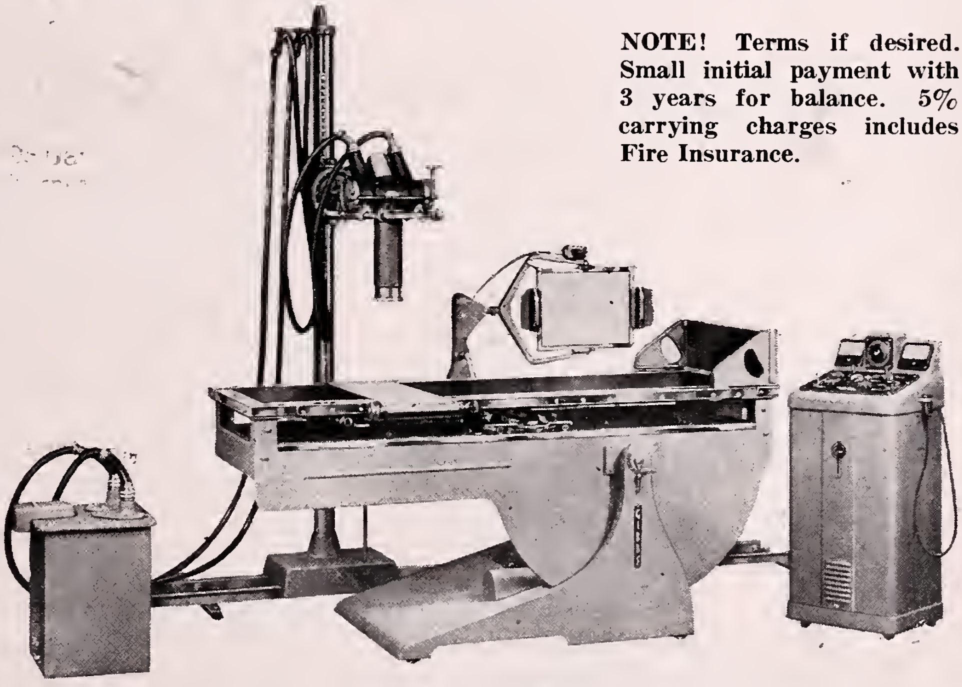

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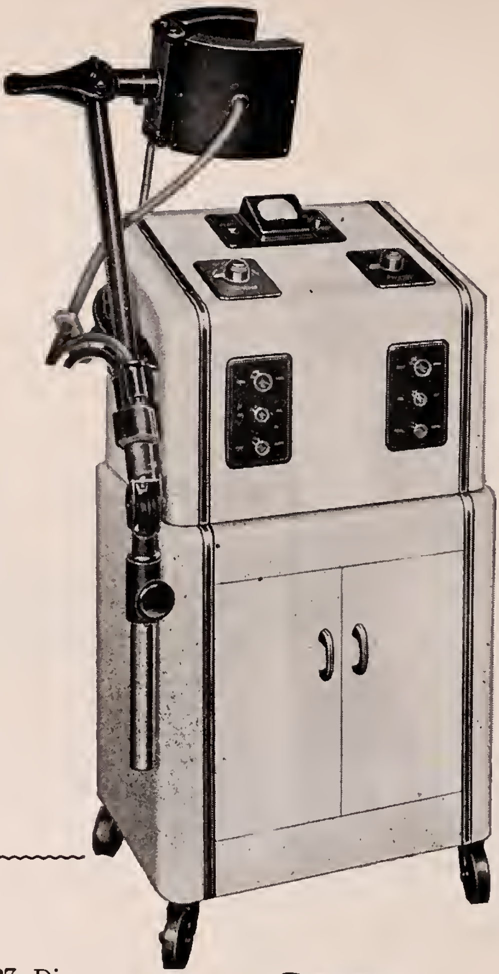

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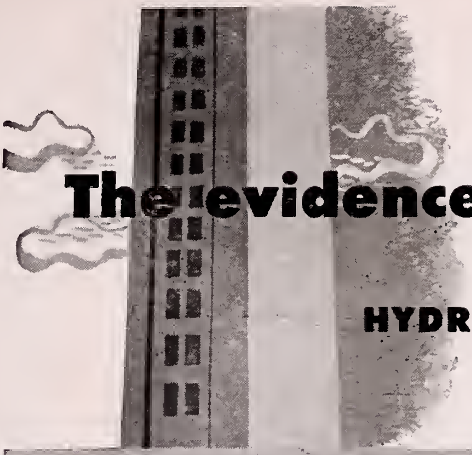

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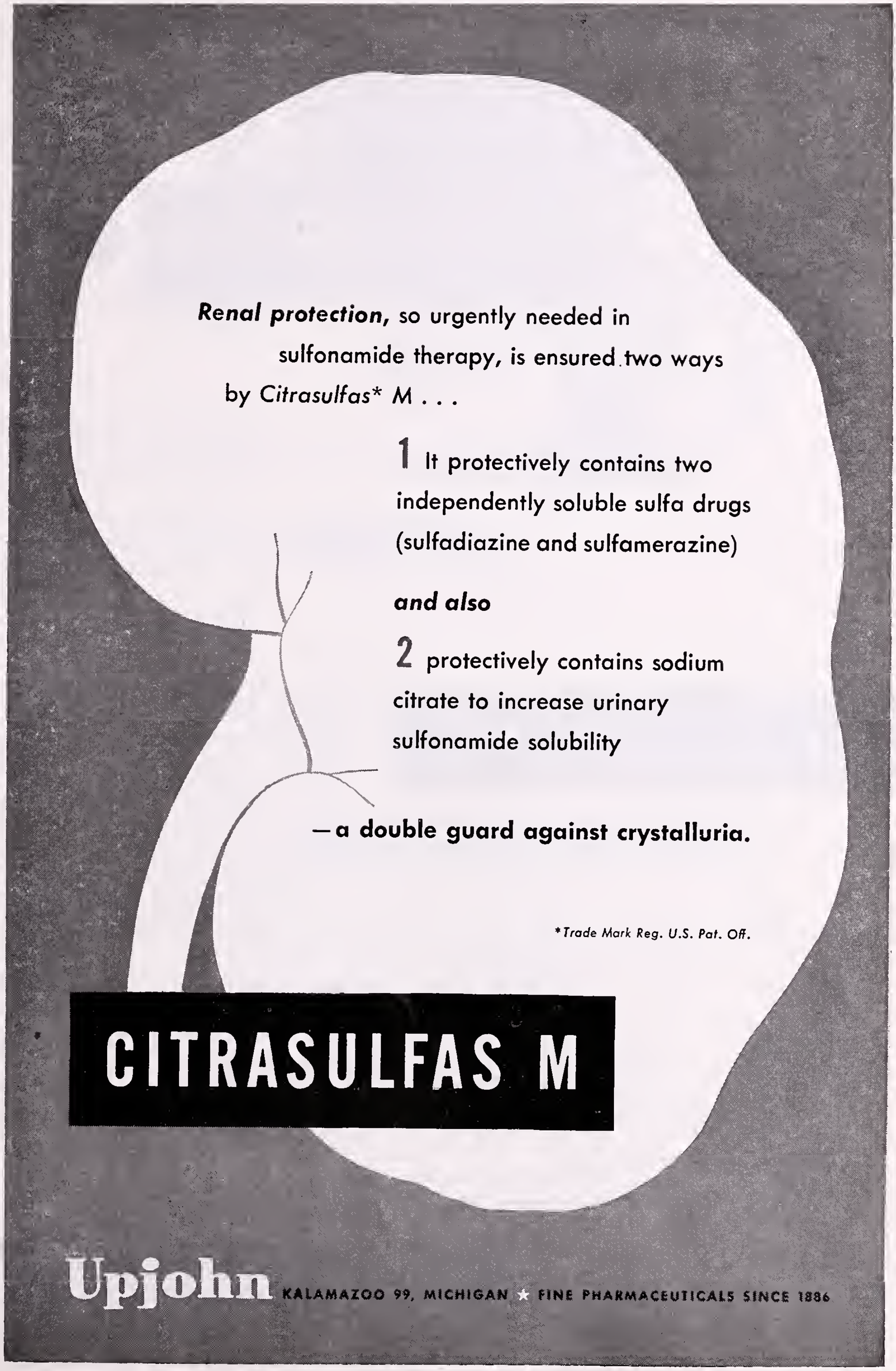

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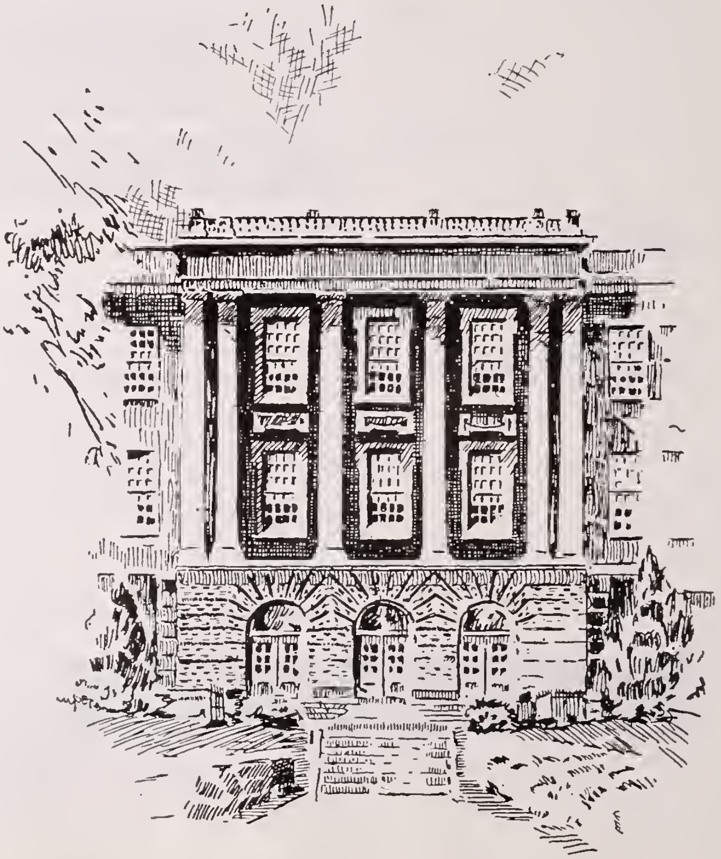

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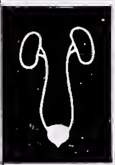

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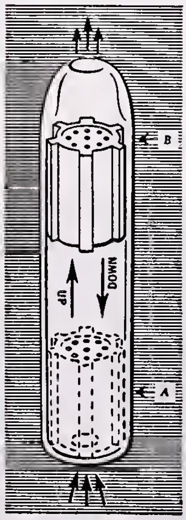

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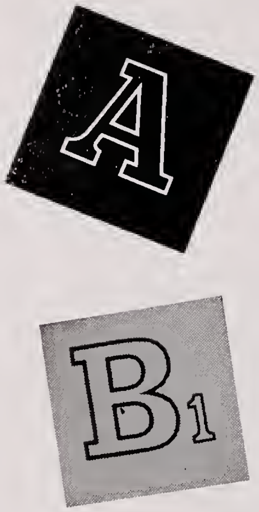

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Operation on the Sympathetic Nervous System for the Relief of Hypertension*

WINCHELL McK. CRAIG, M.D.
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Rochester, Minnesota

According to the latest vital statistics hypertension is more common and fatal than cancer, tuberculosis and pneumonia. The Metropolitan Life Insurance Company has estimated that 600,000 people will die of high blood pressure and related vascular diseases in the United States of America this year.

Hypertension can be divided into two groups, the first being primary or essential hypertension, for which no definite cause can be demonstrated and which comprises between 70 and 80 per cent of all cases of hypertension. The second group is the so-called secondary hypertension which is due to known organic diseases. Between 20 and 30 per cent of all cases fall into this group. Coarctation of the aorta, glomerulonephritis, tumors of the adrenal glands, hyperthyroidism, traumatic arteriovenous fistula or aortic heart disease as well as other conditions may be the underlying cause of the elevated blood pressure. The so-called Cushing syndrome and menstrual disturbances may be associated with increased blood pressure as well as diabetes, abnormal quality and quantity of the steroids and salt retention.

Goldblatt[1] has shown that hypertension produced artificially affects the kidneys. These in turn produce a proteolytic enzyme, coming probably from the tubular cells, which acts on the proteins contained in the alpha-globulin fraction of the plasma. According to Page[2] this produces a pressor substance called angiotonin. However, this substance, angiotonin, has never been found in the blood of patients suffering from hypertension.

When no definite cause for hypertension can be found, several factors must be considered. There may be a faulty central mechanism in the so-called blood pressure center. The patient may have been subjected to excessive mental and physical demands which have affected this regulating mechanism. One factor which has been most interesting to observe is the hereditary influence in hypertension.

Investigators have found a prehypertensive condition which was discovered by using the cold pressor test. A number of years ago Hines and Brown[3] in examining school children by means of a cold pressor test found that 10 per cent of them were so-called hyperreactors and that their blood pressure registered at a much higher level than normal when the test was applied. It was thought at that time that these children were potential hypertensive patients. The parents and grandparents of a large percentage of them had died of hypertension. Some children were found to be hyporeactors, or those who did not react to the cold pressor test. In 492 cases of subjects with normal blood pressure who were hyporeactors there were only 17.2 per cent with a family history of hypertensive cardiovascular disease. However, in 116 cases of hyperreactors there were 84.2 per cent. Patients suffering from essential hypertension in 267 cases gave a family history of hypertensive cardiovascular disease in 86.6 per cent. Thus we see that the hereditary influence is quite active in the background of hypertension.

Recently in discussing hypertension with a professor from one of our eastern medical schools, I learned that it has been found that between 15 and 20 per cent of the medical students had already shown signs of developing arterial disease. This would certainly point to the fact that hypertension begins early in life in the majority of cases.

It has been found in analyzing a large series of cases that surgical treatment is not necessary in the elderly group of patients who have an elevated blood pressure which is asymptomatic. Its field of usefulness is mainly in the twenty- to fifty-year age group of patients whose hypertension develops insidiously and who suddenly blossom forth with symptoms and with very definite irreversible changes in the heart, the kidneys, the brain and other organs of the body.

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*Read at the eightieth annual session of the Mississippi State Medical Association, Jackson, Mississippi, May 12, 1948.

In every review of the medical and surgical treatment of hypertension in which the results are analyzed, it is evident that the treatment is most successful in the cases in which treatment is begun early in the disease before irreversible pathologic changes have taken place, not only in the heart and kidneys but also in the muscles, liver, brain and other organs.

One of our fellows in dermatology, Dr. Farber, has recently made a survey of patients suffering from hypertension and the effect on the arterioles of the skin[4]. In examining the arterioles of skin removed at operation or from patients on whom operation has not been performed, he found that the size of the lumen of the arterioles corresponded to the severity of hypertension from which the patient was suffering.

Every therapeutic procedure applied to patients who had hypertension, both medical and surgical, has been examined carefully in order to evaluate the treatment from the standpoint of relief of symptoms and lowering of blood pressure. In order to have a basic comparison, a classification of hypertension has been established, based on the clinical, pathologic and funduscopic changes found in cases of hypertension. Group 1 contains cases of mild hypertension with no or little changes in the retinal arteries, no retinitis and no edema of ate to severe cases of hypertension with moderate changes in the retinal arteries, no retinitis and no edema of the optic disks. Group 3 contains those cases of moderate to severe hypertension with marked changes in the retinal arteries, with retinitis present but no edema of the optic disks. Group 4 is made up of cases of severe hypertension with marked changes of the retinal arteries, retinitis present as well as edema of the optic disks.

Follow-up of a large series of patients who had undergone medical treatment and dietary regimen revealed that in a period of four years patients in group 1 showed a mortality rate of 20 per cent; in group 2 there was a mortality rate of 42 per cent; in group 3 there was a mortality rate of 78 per cent; and in group 4 there was a mortality rate of 98 per cent. My colleagues and I have taken the groupings of hypertension and their associated mortality rates over a four-year period as a criterion for judging the patients who have been treated both medically and surgically. In our efforts to relieve the symptoms of hypertension and to lower the blood pressure through surgical measures we have endeavored to improve on the results with medical treatment. A review of our surgical cases shows that we have been able to improve on this mortality rate depending on the seriousness of the changes of blood pressure, the irreversible changes which have taken place and the length of time during which the hypertension has been present. Furthermore we have found that patients who start out in group 1 do not maintain that grouping throughout their lives but may suddenly change to group 2, 3 or 4. We have found also that if the patient is followed carefully, his blood pressure being noted frequently, or about every six months, and if an operation is carried out shortly after a change in grouping, there is a reduction in the grouping into which he will fall. A patient who may have suddenly assumed all the characteristics of group 3, may drop after operation to group 1 or even may show normal blood pressure readings as well as normal appearance of the fundi.

The administration of certain drugs causes definite changes in blood pressure readings as well as alleviation of symptoms. Veratrum viride has been used in enteric-coated pills. After its administration there has been a definite fall in blood pressure with relief of symptoms. However, some toxic effects have been noted which necessitate further investigation of this drug before it is used clinically. Rutin, or vitamin P, which is obtained from buckwheat and other cereals, is administered to hypertensive patients in order to strengthen the fragile capillaries. Dibenamine has been given with beneficial results in some cases as it affects the sympathetic nervous system.

A number of diets have been used. The rice diet has been followed by gratifying results in a certain group of patients. A low sodium diet also has been used with success in some cases as well as a low salt or salt-free diet.

During the war a chemical which was a combination of substances similar to those chemicals used in water softener was used to change sea water into palatable and safe drinking water. It has been called "Permutit Z" and is a substance which is supposed to bind the sodium in the diet and allow the patient to obtain the beneficial effects of a low sodium diet. Unfortunately Permutit Z also binds calcium and electrolytes.

There has been a great deal of interest in the psychiatric and psychologic aspects of hypertension and, along with other inquiries into psychosomatic medicine, investigative studies are now being carried out along this line. Two psychic tendencies which stand in close relationship to hypertension are anxiety and rage. Psychoanalytic studies suggest that hostile impulses of which neither the individual nor the casual observer is aware have an important bearing on the blood pressure.

The surgical treatment of hypertension was suggested by Pende[5] in 1920 at the International Surgical Society when he proposed sectioning of the splanchnic nerve for the relief of high blood pressure. Rhizotomy, consisting of the sectioning of the anterior roots of the sixth thoracic nerve to the second lumbar nerve, was followed by marked lowering of blood pressure and marked benefit in symptoms. This proved too drastic and was followed by the resection of the splanchnic nerves. This subdiaphragmatic operation was then carried out. This consisted of resection of the first and second lumbar nerves and the subdiaphragmatic portions of the splanchnic nerve and celiac ganglion. About the same time the supradiaphragmatic operation, consisting of the removal of the tenth, eleventh and twelfth thoracic sympathetic ganglia from above the diaphragm, with removal of the splanchnic nerves, was carried out. These two procedures were then combined into the thoracolumbar sympathetic ganglionectomy with resection of the splanchnic nerves. The thoracolumbar operation has included the removal of the first thoracic ganglion to the fourth and fifth lumbar ganglia and less extensive procedures of removing from the ninth thoracic ganglion to the second lumbar ganglion.

Page, an internist who has been interested in the medical treatment of hypertension for years, has stated that surgical treatment for hypertension has established five facts following operation: 1) Arterial pressure is significantly lowered, 2) clinical improvement has been associated with lowered blood pressure, 3) symptomatic relief has been obtained without lowering the blood pressure, 4) there has been no harmful effect after lowering the blood pressure, and the operation is not a minor one; that is a definite morbidity and mortality rate. Surgical treatment should be used in those cases in which medical treatment has failed.

I should like to make one observation with regard to Page's last remark. As in the treatment of cancer, medical measures should not be tried unsuccessfully over too long a period before surgical treatment is instituted, for irreversible changes may take place which will prevent improvement after the removal of a portion of the sympathetic nervous system. Surgically speaking, the results of the operation are based on the effect on the vasomotor reaction of the vessels of the splanchnic area and the lower extremities. If irreversible changes in the vessels, the muscles, organs and skin have developed, it stands to reason that physiologically no effect will be obtained. Therefore, it is the opinion of those working in this field that operation should be carried out before irreversible changes take place.

In selecting the patients for surgical treatment one keeps in mind that patients who have mild and early high blood pressure are not candidates for surgical intervention. However, patients who do not respond to medical treatment and who have elevated blood pressure with associated symptoms should be considered. Ordinarily these patients are less than fifty years of age. In our results we have found that men should be less than forty-five and women should be less than fifty years. The systolic blood pressure is usually in the neigborhood of 170 and the diastolic in the neighborhood of 105 mm. of mercury. The heart and kidneys should not show marked damage. Severe retinal arteriosclerosis should also be a contraindication. It has been found that the clinical and laboratory reports are probably of more help in predicting poor results than predicting good results. Patients who have a high fixed blood pressure which does not respond after rest in bed, the administration of the barbiturates, the examination with tetra-ethyl-ammonium chloride and the intravenous administration of pentothal sodium are not good candidates and will probably not obtain benefit.

Our results in surgical treatment have been divided into two groups: those in which there has been an actual lowering of blood pressure with associated relief of symptoms and those in which the symptomatic relief has been marked without significant lowering of the blood pressure. We divide our results into the physiologic and the palliative. In the physiologic results there is a definite lowering of blood pressure and in the palliative there is a definite relief of symptoms without a lowering of the blood pressure. While operation has been carried out on patients who have had coronary thrombosis, as well as cerebrovascular accidents, it is logical to suppose that maximal benefit will not be obtained in these cases because of irreversible changes which have already taken place. However, in selected cases of patients who have had cerebrovascular accidents and coronary thrombosis, operation is not contraindicated. From our series and other series in the literature it has been apparents that the surgical treatment of hypertension is most successful in the early cases before irreversible changes have taken place, that not only is there benefit to the blood pressure but also alleviations of symptoms. The removal of the thoracolumbar sympathetic ganglia and splanchnic nerves has been followed by more definite results than have the supradiaphragmatic and subdiaphragmatic operations also.

After thoracolumbar sympathetic ganglionectomy in women menstruation is normal and pregnancy can be completed without any complication. There have been reported in the literature and we have in our series, patients who have been operated on early in their pregnancies who were threatened with such severe exacerbations of hypertension that therapeutic abortion had been advised. Because of their desire for children and their refusal of therapeutic abortions, sympathectomy was carried out. Now the obstetricians feel that in thoracolumbar sympathectomy they have a means of combating threatened abortion and threatened complications in hypertensive patients. In men the only untoward symptom is that of decreased libido which is brought about by the lowered blood pressure and the effect on the ejaculatory powers. In one series 41 per cent of the men showed normal ejaculatory powers, 18 per cent showed a diminution and no power of ejaculation was found in 21 per cent.

To illustrate what I mean by a physiologic result in the surgical treatment of hypertension, let us take the case of a physician, forty-one years of age, who in 1935 was found to have a blood pressure of 140 mm. of mercury systolic and 90 diastolic. He had no symptoms until 1943 when he began to have headaches and shortness of breath. His blood pressure had not become elevated at this time and did not become elevated until 1945 when changes in his fundi developed indicative of group 1 hypertension. At this time he was given potassium thiocyanate as a treatment. His blood pressure came down and his symptoms were alleviated until 1946 when he was losing time from his practice and began to feel as though he could not carry on. Early in the spring of 1946 after operation his blood pressure was reduced to 120 mm. of mercury systolic and 80 diastolic. It has remained about the same for two years and the patient has normal fundi. This case illustrates the value of early surgical intervention in the progression of the disease.

As a further illustration, a woman, aged forty-five years, was not aware of any hypertension until she was examined in 1945 when she was found to have a systolic blood pressure of 260 mm. of mercury and a diastolic pressure of 150. Examination of her fundi revealed group 2 hypertension and there is every reason to believe that it had developed rather rapidly even though she may have been a hyperreactor early in life. Tests with pentothal sodium and rest for twenty-four hours in the hospital with the administration of barbiturates were followed by a drop in blood pressure and her first-stage operation was carried out early in 1946. Her fundi today, two years after operation, show a reduction to group 1 and her blood pressure readings are 130 mm. of mercury systolic and 90 diastolic. We were able to reduce her postoperative grouping after a period of two years from group 2 to group 1, arresting the progression of what promised to be a fairly rapidly advancing hypertension.

Another case in point is that of a man, forty-four years of age, who is a radio announcer and is subjected to severe emotional stress and strain. In 1941 he was found to have a systolic blood pressure of 180 mm. of mercury which was asymptomatic. However, in 1945 irritability, headaches and shortness of breath developed. His preoperative tests were satisfactory and on March 15, 1946, when his blood pressure was 210/140, operation was performed. Today, two years later, his blood pressure is 110/70. At the time of examination he was found to have a fundus of group 2+ and today, two years later, he has a normal fundus, a definite decrease in severity in the grouping of his disease.

These cases are those to which we refer as being physiologic with relief of symptoms and also the lowering of blood pressure. The so-called palliative results are those cases in which the symptoms are relieved without a definite lowering of blood pressure.

An example of this is a woman, aged 44 years, who in 1932 was known to have a blood pressure of 160 mm. of mercury systolic with a diastolic unknown. During pregnancy a systolic blood pressure of 250 mm. developed. When examined in 1946 she was found to have a blood pressure averaging 210/130. Examination of her fundi showed she had group 4 hypertension. The actual symptom which brought her for medical care was the failure of vision, although headache and irritability were present. Even though this patient was classified as group 4 with the advanced arteriosclerosis associated with group 4 hypertension, operation was carried out and the blood pressure was temporarily lowered with marked improvement of vision. When she was examined a year and a half after operation, her blood pressure was 160/110 and the changes in the fundus were still group 4. However, her vision had improved to almost normal and she was relieved of her headache, her irritability and her shortness of breath. It is interesting to note that when during her convalescence she became enraged, her blood pressure immediately rose to 220/130, showing the possibility of a return to a high level at a later date.

In selecting cases one is sometimes forced to operate on patients who are above the age limit and whose tests are not satisfactory.

Such a case was that of a woman who came in complaining of headaches so severe that they prevented her from working for three days a week. Her tests were unsatisfactory; she was turned down for operation but asked to have the operation regardless of the results. She was completely relieved of her headache for eighteen months although the blood pressure, both systolic and diastolic, dropped only about ten points and the results of her funduscopic examination remained the same. A significant fact in this patient's convalescence was that she emphasized the palliative relief of her hypertensive headaches and when she returned to us eighteen months after operation, even though her headaches had returned and she showed definite signs of both cardiac and renal degeneration, she stated that the operation had been well worth while, producing relief from terrific headaches over a period of eighteen months.

Thus we see that in the surgical treatment of hypertension as well as in the treatment of other diseases, sometimes the palliative effect is just as important to the patient as is the physiologic result obtained.

And so it is apparent that during the past ten to fifteen years there has been a definite advancement in the treatment of hypertension. A very careful examination of patients suffering from hypertension is necessary to differentiate between the so-called essential hypertension and secondary hypertension. When factors recognizable by tests during the examination are found, certain specific therapeutic measures can be instituted. When no definite factors can be found, it is necessary to consider the irreversible changes which have taken place as indicated by the examination of the fundi and biopsies of the skin, as well as the reading of the sphygmomanometer.

The medical treatment of hypertension has progressed and certain drugs and diets have been instituted which have been followed by beneficial results.

In reviewing the literature it is the consensus that in cases of advanced hypertensive disease with irreversible peripheral-vascular and organic changes, the surgical results will be in inverse proportion to the amount of damage already done. In our series of cases we have shown that patients with mild hypertension without symptoms do not need surgical treatment. However, we have advised that these patients be kept under observation, not frightened with the threat of hypertension but assured that if they are examined once every six months by a competent physician, surgical treatment can be instituted at a certain stage in their disease, should it advance, which would bring about a control of the progress. It is only in this way that we will be able to control the progress of hypertension. Surgical treatment should be instituted only after conservative means have failed. In the surgical treatment of hypertension we have a therapeutic measure which, if applied at the proper time in the progression of hypertension, may be followed by gratifying results, both physiologic and palliative.

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Management of Uterine Bleeding About the Menopause

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THERE has been much confusion and loose thinking about the subject under discussion. The widespread use of the meaningless term "menopausal bleeding" has not helped to clarify the muddle which exists. There is no clinical entity such as menopausal bleeding. It would be just as logical to speak of "adolescent hemoptysis." Obviously the abnormal bleeding, whether it comes from the lung or the uterus, is only a symptom which should lead ultimately to the correct diagnosis. The analogy may be carried a step further. No physician would advise immediate pneumonectomy as a method of treating hemoptysis, yet there are those who advocate hysterectomy as the routine treatment of choice for any abnormal bleeding about the menopause.

There are three fundamental reasons why a problem exists: 1) lack of definition of abnormal bleeding, 2) lack of concept of the possible diagnoses, 3) lack of plan for excluding the possible diagnoses. Once the correct diagnosis is made, the proper management is usually readily carried out.

It is not possible to define abnormal bleeding without first defining normal uterine bleeding at the menopause. As the climacteric approaches, normal menstruation is usually replaced by anovulatory cycles because of the intrinsic, irreversible failure of the ovaries. Bleeding rarely ceases abruptly, but there is often a gradual lengthening of the cycle and the flow decreases in duration and/or amount. The appearance of too frequent, too prolonged or excessive bleeding during the climacteric or the return of any bleeding, however slight, after the menopause **must** be considered abnormal.

Given a patient with abnormal uterine bleeding about the menopause, what are the diagnostic possibilities? Immediately attention is called to the obvious local causes found in the vulva and vagina which are readily, directly observed during pelvic examination and are not herein considered. Again the patient may be confused as to the source of the bleeding whether vaginal, urethral or rectal. With these exclusions let us consider the possible causes of uterine bleeding. A classification might be made as follows: 1) those under hormonal control, and 2) those not under hormonal control. Of the first group we shall consider only the abnormal influence of estrogens, **naturally produced** or **artificially introduced.** Regardless of the source estrogens produce **endometrial hyperplasia.** The other types of so-called "functional bleeding" are of little concern in this age group.

Those causes not under hormonal control are more numerous. First and foremost comes malignancy. Malignant lesions of the cervix and uterus produce about 50 per cent of all postmenopausal bleeding and at least 5 per cent of all climacteric bleeding. Cervical and uterine polyps are next in frequency followed by bleeding from prolapse, cervicitis, stricture, and adenomyosis. Diseases of the blood or blood vessels, such as purpura, hypoprothrombinemia and others must not be overlooked.

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*Presented by invitation before the Mississippi Obstetrical and Gynecological Society at Jackson, Mississippi, on May 10, 1948.

With these possibilities in mind it is important to proceed in an orderly manner to an accurate diagnosis. It is a trite but true observation that neither special examinations nor tests can ever replace the need for a careful history. There is no need to repeat the stereotyped questions which must be asked, but it is necessary to emphasize some aspects of the history. The first deals with inaccuracy on the part of the patient. Some patients will stoutly maintain that they have never had intermenstrual bleeding and yet will quickly admit that they have noted a brown vaginal discharge, while others insist that they have very excessive bleeding and yet a blood count will show no evidence of anemia.

Another important historical point concerns the intake of estrogens. One of the most common causes of postmenopausal bleeding today is the overtreatment with estrogens. They may be in the form of white pills, purple pills, pink pills, capsules, "shots," subcutaneous pellets, suppositories, ointments and cosmetics. Thus far foodstuffs have not been fortified with estrogens, but who knows what the future will bring!

Finally the history of blood dyscrasias must never be overlooked. Quite recently a patient came to our attention, who, following postmenopausal bleeding, was immediately subjected to hysterectomy without benefit of diagnostic curettage or thoughtful preoperative study. Abnormal bleeding tendencies were noted at operation and in the immediate postoperative period. Thrombocytopenic purpura was readily diagnosed and dramatic improvement followed splenectomy. Blood dyscrasias are not an uncommon or unusual cause of abnormal uterine bleeding even though they may be infrequent.

If the history is followed by an adequate physical and pelvic examination including a speculum examination under good illumination, at least 50 per cent of all causes of abnormal genital bleeding will be solved. However only a very few cases of abnormal **uterine** bleeding will be diagnosed correctly at this point. Yet it is at this point that the physician all too frequently takes the patient from the examining table directly to major surgery.

Before discussing other diagnostic methods let me urge you to familiarize yourself with the small, blunt-typed, slightly malleable uterine sound. It is our custom to probe routinely the cervix of all gynecological patients past the active childbearing age at the time of pelvic examination. This simple but important procedure may establish the diagnosis of an inverting adenocarcinoma of the endocervix in the shell of an apparently normal ectocervix or demonstrate strictures and adhesions of the cervix which are often the cause of bleeding.

With very few exceptions to be mentioned later, every patient with abnormal bleeding in this age group must have a diagnostic dilatation and curettage and biopsy of all suspicious lesions. Under no circumstances should a subtotal hysterectomy ever be done for myomas of the uterus associated with abnormal bleeding without a preliminary diagnostic curettage. At least 25 per cent of all patients with adenocarcinoma of the endometrium have associated myomas. Unless these precepts are followed, lives will be needlessly lost because of unnecessary or inadequate surgery.

Simple but important improvements in the technic of curettage have increased the diagnostic value of the test. First is the use of differential curettage and second is the proper preparation of the specimens for the pathologist. Differential curettage is fractional curettage, first of the cervical canal and then, the uterine cavity. The specimen from the cervical canal however small is always kept separate. The uterus is then curetted thoroughly in a systematic fashion. A few casual strokes do not qualify as a diagnostic curettage. The second important point concerns the handling of the endometrial specimen. It is patently unfair to the pathologist to present a specimen which consists of 95 per cent blood clot and 5 per cent tissue. If the curettings are caught on a strip of gauze moistened in normal saline, the liquid blood will be absorbed readily if the sponge is squeezed gently. The small bits of endometrial tissue will then be clearly visible for **immediate** fixation.

The purpose of the differential curettage is rather obvious. The concentration of all the cervical curettings permits accurate pathological diagnosis of early cervical carcinoma that would be lost in the combined specimen. Do not discard this specimen even though the fragments are minute. On more than one occasion a tiny bit of tissue has proved to contain a very early carcinoma. The value of fractional curettage is great in differentiating adenocarcinoma of the cervix from that of the endometrium. If generous amounts of carcinoma combined with normal endometrium are obtained from the uterine cavity, a cervical adenocarcinoma is suggested.

The use of the suction curet or similar tool to obtain samples of the endometrium for differential diagnosis must be condemned. Such a curet is admirably suited for its intended purpose—the sampling of normal endometrium to determine the presence or absence of ovulation. The average curettage removes no more than 65 per cent of the endometrium; however careful technic will produce much better results. How **unrepresentative** then is the biopsy curet!

The final diagnosis remains in the hands of the pathologists who must be familiar with gynecological pathology, especially that of the endometrium. However let me warn that the surgeon's obligation is not fulfilled by the presentation of a satisfactory specimen. It must be accompanied by a concise brief summary of the patient's history and examination.

This simple plan of excluding possible diagnoses should permit an accurate diagnosis in almost every instance. Once the diagnosis is established, what shall be the logical management? Time does not permit a lengthy discussion of each and every abnormality but the pertinent facts of each important disease will be summarized. First, consideration will be given to bleeding not under hormonal control.

The management of malignancy would be a topic for hours of consideration. Immediately cervical malignancy whether squamous cell carcinoma or adenocarcinoma must be distinguished from endometrial adenocarcinoma. The role of fractional curettage in this regard has been mentioned. All past evidence suggests that both types of cervical carcinoma be treated similarly. The most effective therapy of this tumor is still deep x-ray therapy followed by radium notwithstanding the recent trend toward the radical hysterectomy of the Wertheim type. Certainly the place of radical surgical therapy needs to be reevaluated in the light of modern surgery, but at the present time it should be undertaken only as an investigative procedure. The results to date attest to the skill of the surgeon but apparently offer little increase in life expectancy to the patient. Competent, individualized modern radiation therapy produces an 85 per cent five-year cure rate in patients with League of Nations Stage I tumors.

Adenocarcinoma of the endometrium is best treated by surgery. Although x-ray and/or radium are often used as preliminary therapy, the fundamental attack is nevertheless surgical. Complete removal of uterus, cervix and adnexa will produce a high percentage of cures so long as the tumor remains confined to the uterus.

Polyps of the cervix and endometrium are common problems. Both produce abnormal intermenstrual bleeding indistinguishable from that of carcinoma. They are more common after the menopause. The cervical polyp is readily recognized by inspection as a bright red-velvety, predunculated growth with a small pedicle. These vascular growths usually arise from the endocervix and protrude well beyond the os and are easily removed by snipping the bae or by twisting the pedicle. They should be examined histologically but rarely are they malignant. Epidermization about the base of the polyp has often led to an erroneous diagnosis of squamous carcinoma. Cervical polyps are decent fellows and the gynecologist is usually delighted to find them when a patient has presented herself with intermenstrual or contact bleeding.

Endometrial polyps produce few symptoms except spotting or bleeding. They are diagnosed by dilatation and curettage, which is also a very effective cure. Malignant degeneration is very rare but sometimes a polypoid adenocarcinoma is confused with the benign lesion on gross examination. Microscopic examination gives the answer. Many unnecessary hysterectomies have been done for polyps of the endometrium in the postmenopausal women.

"Fibroids" of the uterus, more correctly called myomas, produce bleeding problems as a rule before the menopause but not infrequently do they produce postmenopausal bleeding. The subserous variety does not produce bleeding and is not herein considered. Intramural myomas do not cause bleeding unless they protrude into the endometrial cavity where their behavior is similar to that of the submucous variety. The chief symptom is bleeding. The menstrual flow is usually very profuse and prolonged, and there may be intermenstrual bleeding, though not commonly. Few gynecological lesions will produce such an acute severe anemia. The bleeding usually comes from large vessels in the myoma which have been opened by an erosion of the endometrial surface. Normal vascular retraction and clotting mechanisms are destroyed and enormous amounts of blood are lost so that the hemoglobin often drops as low as 25 to 50 per cent. Examination may reveal a necrotic beefy polypoid mass protruding through the cervix but sometimes the diagnosis is made by curettage. Diligent, careful control of the curet will demonstrate the "bumpy sensation" so characteristic of these lesions. Bleeding myomas are best treated surgically. If the prolapsing tumor is visible in or through a partially dilated cervix it must be removed vaginally by clamping the pedicle and excising the myoma. The pedicle can be ligated or the clamp left in place for twenty-four to forty-eight hours. Nothing more is done for six to eight weeks. At this time the cervix has closed, the inevitable infection has subsided and the patient's anemia has been corrected. Now is the time to do an elective hysterectomy. If the tumor cannot be handled by excision, then the patient must be transferred and brought into the best possible condition for hysterectomy.

The problem is slightly different in the postmenopausal patient. Myomas characteristically regress with the menopause and if abnormal bleeding was not present earlier, none will appear unless the shrinking of the uterus squeezes an intramural myoma to become submucous. Thus it is possible for a submucous tumor to develop postmenopausally. The management is similar to that just described. Bleeding myomas after the menopause also suggest the rare sarcomatous degeneration which is present in no more than one in three hundred myomatous uteri.

There is little place for radium or x-ray therapy in the management of bleeding myomas. Irradiation acts primarily by castration and only slightly directly on the uterus. Neither regression of the endometrium nor of the tumor affects the eroded vessels previously described. Once the menopause has been passed, little beneficial effect can be had from radiation therapy for any type of myoma.

Prolapse of the uterus may produce an ulceration of the vaginal mucosa with bleeding. Bed rest, douches and tampons will heal the mucosa—a very important step in preparation for vaginal plastic surgery. Immediate failure to heal suggests the need for a biopsy to exclude malignancy.

Cervicitis, cervical stricture, pyometria are inflammatory lesions which may produce bleeding. Little need be said about cervicitis and erosion. Any lesion which requires treatment also requires a biopsy. The biopsy must be at the junction of normal and abnormal areas. More important is the deferment of cauterization until the pathological report has returned. If the report suggests malignancy and an additional biopsy is indicated, immediate cauterization will have destroyed such possibilities. Cervical stricture and pyometria can be successfully treated by cervical dilatation. Curettage should not be done in the presence of infection.

The gynecologist must be constantly aware of the role that diseases of the blood and vascular system play in the problem of abnormal uterine bleeding. We have emphasized the importance of a careful history of bleeding tendencies. Frequently these are not brought to light until a curettage has failed to produce the cause of bleeding. Hysterectomy, aside from being unnecessary in such patients, is frequently a distinct hazard.

The second and very important cause of uterine bleeding is that produced by abnormal hormonal control and is sometimes called functional bleeding. Such a term explains nothing about the disorder. For practical clinical purposes the chief problem in this age group is that of endometrial hyperplasia which, as you know, is associated with some disorder of estrogen metabolism. We recognize very occasionally other types of functional bleeding in this group, for example irregular shedding of the endometrium which is associated with an abnormal persistance of a functioning corpus luteum. Because of its infrequency about the menopause and absence after the menopause there is no need to discuss it here.

Ideas about endometrial hyperplasia have undergone considerable change during the past few years. It is impossible to have an intelligent concept of the disease without knowledge of the normal menstrual cycle. Endometrial proliferation during the first half of the menstrual cycle is produced by the direct action of estrogens and ceases at about the time of ovulation when the effects of progesterone are manifested by the change to a secretory type of endometrium. Such is the cycle of the normally healthy sexually mature woman. At either end of the menstrual life the complete cycle is not always achieved. For some reason, presumably the pituitary, the ripened follicle fails to rupture and it persists as an unripened follicle. Under the estrogenic stimulus of one or more such follicles, the endometrium continues to grow in its proliferaive phase until there is a levelling off or a drop in the amount of estrogens supplied. Bleeding now follows but in the simple anovulatory cycle it is usually not profuse nor prolonged even though frequently irregular. Endometrial hyperplasia is nothing more than an exaggerated anovulatory cycle and the endometrium is subjected to an abnormally prolonged and/or excessive amount of estrogen. As the climacteric is characterized by anovulatory cycles, it is not surprising to find frequent breaks into true endometrial hyperplasia.

This is not the time for a histological description of the lesion but recent developments make it necessary. Most of you are familiar with the so-called "Swiss cheese" pattern of hyperplasia which is sometimes seen. But we now recognize this as the end stage of estrogenic stimulation; whereas hyperplasia can extend all the way back to the proliferative endometrium of the anovulatory cycle where the two blend. It is unfortunate that some pathologists still continue to call true hyperplasia proliferative endometrium.

Before discussing the varied etiology of the condition, let us consider diagnosis. The symptoms are usually those of an irregular prolongation of the cycle. Several weeks are usually required to build up an endometrium of this type so the patient has amenorrhea from four to eight or more weeks. Bleeding once established is often profuse and prolonged for many days or weeks. Sometimes it will cease for a week or so only to begin again. During this time the thick succulent endometrium is shedding and once completed, another cycle begins. The patient experiences no pain unless blood clots are forced out of the cervix by uterine contractions. Rarely does bleeding mimic a true menstrual cycle. The diagnosis is always histological as determined from curettage. However curettage must be done at a carefully selected time or the diagnosis is impossible. We have stressed how the normal proliferative endometrium gradually progresses into hyperplasia. If the curettage is done shortly after the completion of a bleeding cycle, an apparently normal proliferative endometrium will be obtained. Therefore the curettage should be done during the early bleeding phase when the diagnosis should be obvious. Curettage usually yields a large quantity of rather polypoid endometrium. The inexperienced surgeon at this point jumps to the conclusion that he is dealing with a malignancy and proceeds immediately to an unnecessary hysterectomy. As a rule the absence of friable necrotic material speaks against carcinoma but often early superficial carcinomas cannot be differentiated grossly from hyperplasia. Routine microscopic preparations will usually give unequivocal information, but frozen sections have been disappointing in our hands. Sometimes, however, it is almost impossible to distinguish pathologically some of the hyperplastic lesions from early superficial adenocarcinoma. These must be treated as carcinoma.

The treatment depends upon the etiology of the hyperplasia. Let us consider first the woman who is near but has not reached the menopause. Intrinsic, irreversible ovarian failure has begun; consequently all types of endocrine therapy are contraindicated. Estrogens should not be given. Although they might check the bleeding temporarily, they eventually make the condition worse. The simplest form of therapy is curettage and at least 50 per cent of our patients have been permanently cured by such a simple measure. Should bleeding recur, the curettage is repeated to confirm the diagnosis and to rule out malignancy. Ovarian function is then terminated by x-ray or radium therapy. My personal preference is deep x-ray therapy, usually four treatments of 100 roentgens each, to the ovaries on successive days. This can be done as outpatient therapy. Some prefer radium which acts in a similar manner but is slightly more dangerous. Usually 2500 mgs. hours will suffice. Hysterectomy is not used unless the patient has coexisting abnormalities, such as cystocele, rectocele or myomas.

The most common cause of postmenopausal bleeding today is the excessive use of estrogenic compounds. Much of this arises from an attempt to control all menopausal symptoms completely with estrogenic therapy. The value of estrogens in the menopause has been overrated. At best they do little more than relieve vasomotor flushes. The use of small doses of phenobarbital will permit a drastic reduction or elimination of estrogens.

The management of postmenopausal bleeding due to administration of estrogens is not settled. Many favor nothing more than immediate withdrawal of therapy and curet only if bleeding recurs. This is probably safe if the patient can and will return for follow-up examinations. On the other hand if the patient lives at some distance or is not well known to the physician, then curettage should be done immediately. The vagaries of carcinoma make it most dangerous to dispense with diagnostic curettage in any woman with abnormal bleeding.

Finally, there is the appearance of endometrial hyperplasia in the woman past the menopause who has taken no estrogen. She has an abnormal endogenous source of hormone. Occasionally persistent low grade ovarian function will produce such a condition. Curettage should cure but if the condition recurs, laparotomy is advisable. There is no place for radiation therapy in postmenopausal hyperplasia. Everyone is well aware of the estrogenic activity of the granulosa cell and theca cell tumors. Endometrial hyperplasia associated with a solid adnexal tumor strongly suggests this diagnosis and laparotomy is indicated.

A discussion of this type is not complete without considering the management of the patient who persists with postmenopausal bleeding and curettage has failed to reveal the diagnosis. Fortunately these are rare. When no endometrium whatsoever appears on the microscopic slide after curettage, it is well to suspect that a false passage had been produced by the cervical dilators. We have observed one such patient who had a carcinoma of the endometrium. Every endometrium, however senile, should yield some microscopic tissue at the time of curettage. On two occasions we have found normal endometrium on two consecutive curettages. In spite of this, bleeding continued. There were small adnexal masses. Laparotomy disclosed a carcinoma of the fallopian tubes. In view of such possible errors, our policy at the present time suggests exploratory laparotomy in patients who have continued postmenopausal uterine bleeding following two failures of diagnostic curettage.

The recipe for management of abnormal bleeding about the menopause must begin something as the old recipe for rabbit stew which began as follows: First you must catch a rabbit. First you must make a diagnosis on the basis of the possibilities suggested and according to a definite diagnostic plan.

Malignancies of the fundus are treated surgically while those of the cervix, by irradiation. Polyps are simply removed. Bleeding myomas are best treated by removal. Endometrial hyperplasia is managed by eliminating the source of estrogens rather than the end organ (the uterus upon which they act.)

In coöperation with the Department of Medicine of the Graduate School of the University of Florida and the Clinical Society of the Duval County Diabetes Association the U. S. Public Health Service is presenting a seminar on diabetes at the George Washington Hotel, Jacksonville, Florida, March 28 and 29, 1949. The speakers will be as follows:

Dr. Charles H. Best, co-discoverer of insulin.

Dr. Elliott P. Joslin, medical director of Baker Clinic, Boston, Mass.

Dr. Joseph H. Barach, professor of medicine in University of Pittsburgh; director of Falk Clinic.

Dr. John A. Reed, assistant clinical professor of medicine in George Washington University.

Hotel reservations should be made through Dr. Malcolm J. Ford, Diabetes Demonstration Unit, Box 210, Jacksonville, Florida.

Psychiatry and the General Practitioner*

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We physicians know that the human body with its various systems cannot be considered in any way except as a whole and no individual system can be considered as an independent unit because of its interrelationship with the other systems of the body. Man is a complex unit composed not only of the precise laws of the laboratory but also of the laws which regulate the reaction of man to his environment. To neglect the life situation of the patient is to ignore factors which are essential for understanding the patient's symptoms. Modern medical thought stresses the dynamics of the personality as well as the dynamics of the circulation and the digestion. Instead of thinking in terms of structural damage and clinical symptoms to the exclusion of the personal aspects, the physician considers the specific demands upon the individual, his constitutional type of reaction, and the functional level of the efficiency of the various systems.

As a specialist, the psychiatrist deals with the behavior of human beings, directing his attention to the attainment of health, happiness, achievement, and the satisfaction that comes with success, by his patient. As the prevention of physical disease is often more successful than treatment, so education and training in the art of living are more important than psychotherapy or punishment for unhappy and maladjusted humanity. An educated and disciplined mind necessarily precedes the attainment of a maximum of success and happiness.

Quite obviously the general practitioner shares to an extent these perspectives with the psychiatrist in so far as he handles the personal problems and emotions of his patients. Clinical pictures at times may be satisfactorily studied and treated without specific attention given to the psychology of the patient and to his social or economic background. The majority of cases, however, include those personal factors involved with the patient's attitude toward his problem.

In order to carry out his duties to their full potential, the general practitioner generally needs to extend his scope of practice into the realm of human behavior as it concerns meeting the problems of everyday life. Psychiatry, as a specialization, could not begin to cope with all the people who need a certain amount of attention related to personality problems. I think the statistics which evolved from World War II have sufficiently demonstrated the number of psychoneurotic people to be found in all walks of life.

Who is better located than the general practitioner when it comes to catching these psychic problems in their infancy? The public does not yet accept the psychiatrist as an institution; rather, he is a stepping-stone to the state institution. The general practitioner, often the family doctor, can properly handle the patient as he begins to notice a strain and, if necessary, recommend that a psychiatrist be consulted. The fundamentals of psychiatry should be understood by the physician so that he may recognize the more serious of psychiatric disorders. For instance, he should be able to recognize the patient with definite persecutory or paranoid delusions. He should be suspicious of paresis when some quiet and easy-going normally religious individual in the community begins to chase "chickens," spend money too freely and begins to visit the "hot spots" of the community or, in fact becomes a play boy. If the blood Wassermann is negative, consider spinal fluid examination by all means. I would also call attention to the depressive female going through the menopause who feels that she cannot get well and begins to tell the family they would be better off without her, that she is in the way and her doctor's fees will take up all the money and the family will be destitute. Such a patient as this is contemplating suicide and it will be well for the physician to caution the family and above all have her placed in the hands of a psychiatrist.

In the psychoneuroses group are included cases which more specifically would be diagnosed hysteria, anxiety neurosis and compulsive neurosis as well as others in which the diagnosis is less precise. In hysteria the physical symptoms are not due to any simple disorder of a single organ or system but they represent repressed factors, unconventional desires, painful memories, childhood tendencies, compensatory reactions. The hysterical symptoms are significant of personal difficulties, not of mere physiological disturbances as they often seem to be. A patient with hysteria attempts to attain a certain peace of mind or to attain a certain external goal. Morbid fear also indicates the presence of some personal difficulty which is not frankly faced and handled by the individual. It may essentially be the same problem as one meets in hysteria, but owing to constitutional differences the patient does not develop a physical symptom but a morbid fear.

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*Read before the Sixth District Meeting of the American Academy of General Practitioners, October 7, 1948, Hammond, La.

†Psychiatrist and Medical Director, Fenwick Sanitarium.

In obsessions or compulsive thoughts and acts there again is the disguised expression of underlying factors which are not honestly faced by the individual but which express themselves indirectly. An analysis of psychoneurotic problems invariably reveals the presence of unsuspected forces which to the patients themselves might seem unbelievable. They must be led to face their problems, however, no matter how distasteful the process may seem to be. And, it is important that the physician does not serve as a crutch at any time, lest the cure be incomplete with the patient leaning on his doctor when decisions are to be faced.

Because most people prefer to attend one doctor, the general practitioner has an opportunity to learn the general background of many of his patients without making an effort to do so. Later, the information may serve a good purpose. Undoubtedly, there are times when he might patch up family problems tending toward divorce by assisting both man and wife to see their situation objectively and perhaps helping them make the proper adjustments. Again, he may contribute sound advice to uneducated parents as to the upbringing of their offspring. Such a program is a valuable function of preventive medicine in preventing young people from growing into adulthood incapable of adjusting to the trials of life.

Many times the physician will not be able to distinguish, at a patient's first visit, whether there are only so-called physical factors, or personality factors also, involved. Of course, should the patient exhibit emotional disturbances, he would receive a lead as to the nature of the problem. In the majority of cases, however, when the apparent's symptoms do not indicate a clear picture of a strictly physical anomaly, the general practitioner would do well to take time to make the patient feel completely at ease and let him take opportunity to talk himself out. The patient should not be required to blindly follow a history outline. The practitioner would be wise to listen for important clues and leads rather than question the patient directly, for if pressed, the patient may become suspicious and refuse to follow his lead.

The physician can usually perceive quite early a case that is primarily psychological. It is true that a man with an internal ailment may be greatly upset, just as those irritated with a toothache do not often hide their feelings. In this instance, as in peptic ulcers, one might not know whether the etiologic factor were organic or psychological. Only by the telling of the patient's story can the doctor get a glimpse at the issues fundamentally involved. In either situation, then, a basically psychological problem or one with psychological complications, it is more effective to spend the first visit in hearing the patient out, giving him sympathy and understanding.

At the next interview it is highly important to do a very complete physical examination, so that the patient knows that nothing of a physical nature has been overlooked. Necessary laboratory work should be done, as well as x-ray work, for the physician must satisfy himself that he is not dealing with any organic disease before he makes a diagnosis of a functional or neurotic condition. At this point I would call your attention to two important conditions that may be easily overlooked and both capable of producing a chain of symptoms which can be easily tagged as neurotic. I have reference to the subclinical vitamin deficiencies and secondly, the chronic, frequently afebrile type, of undulant fever. The complete problem of the patient's physical defects as well as his emotional problem must be reviewed in the order of their importance to the patient. This examination serves many purposes. It may catch an early case of paresis, encephalitis, brain tumor, or any of the other organic disease which often escape detection until more obvious manifestations appear. If the examination reveals no organic complications, the physician can assume that the problem is fundamentally psychological, and the patient can be given the corresponding consideration in therapy. The examination usually reassures the patient, giving him a demonstration that someone is going to help him, thus serving to prevent the development of a severe anxiety neurosis.

After the physician satisfies himself that he is dealing with a psychological matter, he may begin his program of psychotherapy. The following are suggestions he would do well to keep in mind:

He should persistently demonstrate a friendly interest in the patient's welfare in order to win his confidence and cooperation.

He should study the emotional habits and sensitizations of people in order to avoid wounding his patient's pride or insulting his patient's intelligence.

He should never tell a patient that nothing is the matter with him or that he should "snap out of it." The emotionally sick person is as sick as the person suffering from organic disease.

The physician should consistently be honest and tell all necessary facts, but also should prepare the way for bad news that must be told, and for constructive personal criticism that may hurt pride.

The patient should not be directly confronted with his faults, but should be asked if he has any and let expand on them if he cares to. Patients tolerate self-criticism, of course, better than faults found by others.

The patient's personality should be discussed with others in his presence or within his hearing. Such a consideration will serve to protect him from the tactless remarks of others.

The physician should be a good listener and thus get his patient's point of view and confidence at the same time.

If the patient fails to carry out directions successfully, he should not be blamed unduly. It is very possible that the physician has not sold him sufficiently on his plan of treatment, or on himself as a doctor.

The doctor should never lose his own emotional composure. Such an error is evidence of professional inadequacy and the indulgence of personal feelings.

The attitude of defeat certainly should not be in evidence. As patients possess uncanny ability to understand facial expressions and mannerisms, they readily can note the air of doubt or discouragement on the part of the physician. Naturally, such information would react unfavorably on the patient's emotions.

Commendation and approval, sincerely given, serve as antidotes for discouragement.

The physician should not serve as a crutch by making the patient's decisions for him. Rather, he should be given information which he may use to help him decide for himself and carry his own responsibility within the limits of his capacity.

Sex problems, invariably are found in psychoneurotic problems. Above all, a physician should not attach approval to any extramarital relationship as a therapeutic measure. The emotional sentimental reactions involved in the entire field of the reproduction instincts cannot be satisfactorily adjusted on a superficial or temporary basis. It is better for the patient to sublimate in the direction of constructive occupation and intellectual development than to seek relief in ill-advised self-indulgence which would tend to make matters worse.

The patient's life must be one of positive living and not one of introspection. Naturally, every environmental situation in the patient's life can not be changed, some will have to be met and accepted by the patient in a less sensitive manner. In a case where resistance persists, the practitioner must be considerate of the fact that psychiatric people frequently need much study and many interviews. On the other hand, he must not wait until the problem becomes a chronic one before he decides to send the patient to a psychiatrist for more specialized treatment. Unfortunately, we have a variety of quacks and cults throughout the country that offer cure-alls, and if the patient finds no relief he may attend one of these in desperation.

In relating psychiatry to general practice, the greatest service the doctor can do for his patient is to act just as he does with other medical specialties. He can learn to make accurate diagnosis, building up the patient's morale as he studies him, and either treat him as effectively as possible, or refer him to the psychiatrist in more involved cases, thus putting him quickly on the road to recovery.

Modern Surgical Management of Goiter*

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Technical surgery of the thyroid gland was not young at the beginning of the twentieth century for even at that time one man, Kocher, had personally performed 5,000 operations for goiter. Most of these undoubtedly were for nodular goiter. A few men in this country, including Halsted, the Mayos, and Crile, were pioneers in goiter surgery and they had remarkably low mortality except for one type of goiter, that is, toxic goiter either of the diffuse or nodular variety. The first great advance in the reduction of mortality for surgery may be accredited to Plummer who in 1921 introduced the use of iodine as a preoperative measure for toxic diffuse or exophthalmic goiter. This reduced the mortality for operations for exophthalmic goiter, in able hands, from 10 per cent to less than 2 per cent. A large number of thyroid operations could then be accomplished with a great salvage of life for these severely sick individuals. Following this the highest mortality for any phase of the disease was for thyrocardiacs or longstanding toxic nodular goiters, .. e., adenomatous goiters with hyperthyroidism and with cardiac damage. In reality the blame for higher mortality rates in these cases could be attributed not to the surgeon but to procrastination, usually the fault of the patient. In other words, when systemic changes had become so severe that the risk was greatly increased, the surgeons lost patients whom they could have saved had the operations been done at a more timely period in the disease.

A next great advance in the treatment of toxic goiter was made in 1943 when Astwood introduced the use of thiouracil to control hyperthyroidism. For a time it seemed as though this drug might remove toxic diffuse goiter from the realm of surgery and place it in the diseases controllable by medical management. As farther trial and experience with the drug more clearly crystallized the results to be expected from its use, it became apparent that the reduction of the basal metabolic rate to within the normal range in the very toxic patient with a diffuse goiter was not the sole criterion of cure. Many of these patients retained a number of the symptoms of toxicity including a rapid pulse, a certain intrinsic nervousness and a feeling of weakness and this in spite of the fact that the basal metabolic rate had been suppressed. In some of these individuals the gland actually became larger after the administration of thiouracil. Moreover it became apparent as reports from various sources accumulated that treatment with thiouracil was not without danger and that granulocytopenia and death was one of the real threats for use of the drug for indefinite periods. Thiouracil then was used as a preoperative measure to reduce the basal metabolic rate and bring the patient's operative risk to an almost negligible factor. Thiouracil which first became a threat to surgery was found to enhance its value, and surgery remains at the present time the treatment of choice for toxic goiter, particularly since thiouracil, or propylthiouracil, in the preoperative phase has farther reduced the risk in the severely toxic patient.

The indications for surgery in goiter have changed with increasing technical refinements and lowered mortality rates. Nodular goiters today may be removed justifiably, as preventive surgery, particularly if they are single nodules; and this may be done with the intent to reduce the incidence of carcinoma which may occur in single nodules, and secondly, to reduce the incidence of secondary hyperthyroidism which may follow upon a long standing nodular goiter. In reality the risk for removing non-toxic goiters is practically negligible, perhaps as little as one death in 500 to 1,000 operations. On the other hand, the real risk lies in operation for toxic goiters. Today it is more apparent that the sooner the patient is operated upon for toxic goiter the better will be the result because early operation prevents systemic changes, such as cardiac damage, degenerative changes in the liver, and severe persisting exophthalmos. Thyroidectomy following reduction of basal metabolic rate by propylthiouracil and Lugol's solution results in fewer persisting symptoms of hyperthyroidism than were found following the use of iodine alone as a preoperative measure. Today the patient with a moderately severe toxic diffuse goiter prepared by propylthiouracil and iodine and operated upon is usually entirely well within a period of weeks, whereas even though a very radical operation had been performed before the use of propylthiouracil, many of the symptoms of hyperthyroidism would sometimes persist for months. Among these were tachycardia, weakness, and oedema of the eyelids and nervousness. Usually today, a patient following the resection of the thyroid gland after adequate preparation, is very promptly returned to a normal emotional and physiologic systemic balance.

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*Read at the meeting of the Coast Counties Medical Society, Gulfport, Miss., August 4, 1948.

*From the Surgical Services of Dr. Howard Mahorner, Baptist Hospital, Touro Infirmary and Eye, Ear, Nose and Throat Hospital.

In 1944 in the periodical "Surgery" I reported 101 patients with goiter who had been operated upon on my private services between 1942 and November, 1944. Fifty-five of the patients had toxic goiters and 46 had non-toxic nodular goiters. Pathologists reported Hashimoto's disease in two instances. Four patients had substernal goiters. One patient with a toxic goiter was a child aged thirteen years. Seven of the patients were operated upon by multiple operations because of the severity of their toxicity. Two patients died following operation. Both of these were colored women with toxic diffuse exophthalmic goiter. Both deaths occurred postoperatively within two days, presumably of thyroid crisis. I made the remark in that paper that it appeared to me that the incidence of a high mortality in the negro race which has frequently been reported from the South, is due largely to the fact that it is difficult or impossible to provide negroes who are very sick with the proper surroundings for operation. These negroes in this report were operated upon at the Eye, Ear, Nose and Throat Hospital where I have a goiter clinic. They were in unfavorable conditions, not in single rooms but in crowded wards and with anything but luxury. It so frequently happens that negro patients may thus be put at a disadvantage. In neither of these instances was thiouracil used because they were operated upon before the advent of the use of that drug.

Since November, 1944, we have operated on 137 goiters on my services. All operations were done in one stage. There was one death in this group and that occurred in a woman with extremely severe toxic diffuse goiter. Here again the patient's life could have been saved by better, or more firm, surgical judgment. The question of economic difficulties came into the consideration and it is my experience that whenever a surgeon lets that enter into his judgment, he may make a mistake. This patient was extremely sick. She was hospitalized and partially because of the economic condition of the family operation was hastened whereas if procrastination had been used for a longer period of time to get the patient in better physical condition, her life undoubtedly could have been saved.

Of 137 patients operated upon, 65 had toxic goiters and 70 had non-toxic goiters; two had carcinoma of the thyroid gland. In the series of 137 cases the mortality rate was 0.7 per cent. Undoubtedly farther reduction in these risks may be accomplished. I feel convinced that the two greatest factors in operative mortality are judgment on the part of the surgeon and technical work in the operating room. Patients with severely toxic goiters cannot stand prolonged anaesthetics. They cannot stand technical errors. If they are prepared today with the reduction of their basal metabolic rate to normal, even though it takes weeks to accomplish this, they may be carried through an operation with extremely small risk.

I wish to show you a moving picture which we took only two weeks ago. That explains the fact that we do not have legends nor titles in the picture. As a substitute for these I would like to make a few remarks during the showing of the picture. The moving picture was taken during operation on a patient who had a very mildly toxic large nodular goiter. It was substernal on the right side as you will see in the picture. In addition to that, the patient had a tumor over the left parotid gland and this tumor was high and it was soft. I felt that the tumor in the left preauricular area was an epiparotid lipomao because it was soft. For that reason I felt that I could safely do the thyroidectomy and the removal of the "epiparotid tumor" at the same operation. The thyroidectomy was accomplished without incident. During the operation both recurrent laryngeal nerves were exposed, a procedure which I do not use constantly, but which I have done many times and enough to be sure that the reason that I do not always employ it is not because I can't do it. After doing the thyroidectomy I operated upon the preauricular tumor. It was found to be intimately associated with the parotid gland. It was necessary to expose the facial nerve and its ramification in order to remove the lesion completely. This tumor proved to be a cyst which subsequently was reported to be a branchial cleft cyst. It seemed to be intimately connected to and associated with the parotid gland. In the moving picture you will see the dissection of the radiating filaments of the facial nerve. This patient has made a prompt recovery following operation. Except for a slight weakness at the upper angle of the mouth she has complete motor function of the face. This slight weakness may be due to pressure on the nerve in testing it as shown in the moving picture. She has good expression, can rotate her mouth in all directions, she can whistle and in reality, unless one is very critical there is no discernible difference in the motions of the two sides of the face. Had I known that the operation would have necessitated such a careful dissection of the facial nerve, I would not have elected to do the thyroidectomy and removal of the parotid tumor at the same time. However, while taking moving pictures and with the careful dissection necessary, both procedures required about two hours and fifteen minutes.

PAST-PRESIDENTS' BANQUET IN 1948, DR. MAX LINDSAY, HOST

Left to right, back row: Drs. H. T. Smith, McGehee, Ark.; H. Fay Jones, Little Rock, Ark.; H. King Wade, Hot Springs, Ark.; C. R. Crutchfield, Nashville, Tenn.; L. W. Long, Jackson, Miss.; E. C. Parker, vice-president, Gulfport, Miss.; L. H. McDaniels, Tyronza, Ark.; W. H. Anderson, secretary, Booneville, Miss.; Allen E. Cox, Helena, Ark.; Max Lindsay, president, Spring City, Tenn.; Jere L. Crook, Jackson, Tenn.; A. G. Hudson, Memphis, Tenn.

On Wednesday evening at the Peabody Hotel, February 11, 1948, Dr. Max Lindsay, president of the Mid-South Postgraduate Medical Assembly, had as his guests, members of the Past-Presidents' Club at a fine banquet. Dr. Lindsay, who on the death of President J. C. Pennington became acting president, was a most able and entertaining host.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

Dr. Frank M. Acree of Greenville, Mississippi, president of the Mid-South Postgraduate Medical Assembly, extends cordial greetings:

"As presiding officer for the sixtieth annual meeting of the Mid-South Postgraduate Medical Assembly, it is both a privilege and an honor to extend cordial and sincere greetings to the members of the medical profession throughout the Mid-South area. It is hoped that every member within this area will avail himself of the opportunity presented by this program which provides the highest type of postgraduate instruction.

"The program covers all phases of medicine and is presented for the benefit of Mid-South doctors, the leaders of the medical profession. Each essayist has a worthwhile message. The hospitality of the great city of Memphis is too well known to need mentioning. Its central location makes it easily accessible to all. Nowhere in America can one get so much for so little expenditure of time and effort as attendance at this meeting gives.

According to the **American Medical Journal** 3,230 physicians died in 1948, an increase of 190 over 1947. The average age at death was 67.4 years. The average age in 1947 was 66.7, and 66.1 in 1946. Heart disease accounted for 41 per cent of all deaths of doctors. Since the outbreak of World War II the **Journal** has recorded a total of 881 military deaths among physicians, 313 having been killed in action.

The United States is marching at the top and in the lead in medical service to the people. This should be and is appreciated by the people. Not all the credit is due to the medical profession perhaps because our people are financially able to utilize more medical service than the average nation. But we must still remember that the strength of a nation is in the health of its people. The Biblical threescore and ten is about the average span of life in this country. For our people to take the backward step of socialized medicine, regimentation in medicine, at this time is unthinkable.

Memphis has a good medical school, one of the most practical in the nation now. It seems that Dean Hyman and others interested in more and better medical service favor increasing the capacity of this fine school. Either we must have more medical schools or we must increase the capacity of the ones we have. It would be fine for this medical school in Memphis to increase its capacity. But of greater importance to us is that Mississippi should have its own medical school. For nearly a half century Mississippi has had a good two-year medical school, but this does not now meet the problem. The nation needs five or six more good medical schools, practical schools to turn out practitioners. Jackson, Mississippi, has an excellent location. Our state is able to have a four-year school and can easily have the kind of medical school we need. We have already waited too long. The time for action is at hand. Many of our schools need to give much of their time and effort to graduate work. Too many of our medical schools exist to teach, to turn out specialists, and give but little attention to training plain doctors. After all, a few practitioners could fit into our medical economy. This nation will be short of doctors and nurses for some time to come even with more schools and larger schools. The short-sighted policy of our government in taking out medical students and scientists to place in the fighting ranks has proved too expensive. Medical service must be carried to the people, medical education out to the busy practitioner, specialists must see the needs in the small town and rural community and heed the call. When three hundred of the finest young men in our state want to go to medical school and only thirty can be taken, it is time for action. Forty per cent of our people are still not being properly served by the best in medicine. Our state has everything required to have the best medical school in the United States, and with the urgent need at hand it is time to by-pass the selfish, short-sighted obstructors, if there be any left, and get our four-year medical school in action. There may be a few excuses for not so doing, but there is not one reason.

President

DR. F. M. ACREE
Greenville, Mississippi

The president, a Tennessean by birth and education (born in Dover and graduated with the B.S. and M.D. degrees from the University of Tennessee), has been a Mississippian throughout his medical career. His interests have been so varied and balanced he is widely known among many different groups through the mid-South. His affiliations include:

Medical Societies: Delta Medical Society; Mississippi State Association; American Medical Association; Southern Medical Association; Mid-South Postgraduate Medical Assembly; Fellow, American College of Physicians; American Association for the Study of Goiter.

Honors: Vice-president, Mid-South Postgraduate Medical Assembly 1932; secretary, Delta Medical Society 1935-1942; president, Delta Medical Society 1947; fraternal delegate to Arkansas 1947; president-elect, Mid-South Postgraduate Medical Assembly 1948; president, Mid-South Postgraduate Medical Assembly 1949; secretary, Delta Medical Society 1948-1949; certified by American Board of Internal Medicine.

Member: Masonic Fraternity; American Legion; "40 & 8"; Phi Chi (medical); AOA, (honorary medical); Rotarian (president 1934); Baptist Church.

Military Service: Private, World War I. Entered service July 1942. Sent overseas with the 184th General; Chief of Section of Gastro-Enterology; discharged on October 19, 1945, with rank of major.

President-elect

DR. HOYT R. ALLEN
Little Rock, Arkansas

The incoming president is perhaps as well known in medical education circles as in the practice of his specialty. Dr. Hoyt R. Allen is professor of surgery and in charge of the Department of Proctology at the University of Arkansas School of Medicine. He is a fellow of the American Proctologic Society, treasurer of the American Proctologic Society, a member of the American Board of Surgery in Proctology, the Board of International College of Surgeons, and is chairman of the section on proctology for the Southern Medical Association.

In practice he is chief of the Department of Proctology of St. Vincent's Infirmary and consultant at the Baptist Hospital and the Children's Hospital in Little Rock, Ark. Dr. Allen is also a past-president of the Pulaski County Medical Society.

Vice-Presidents

Dr. Armstrong

Dr. Sanders

Dr. Hood

DR. H. L. ARMSTRONG
Somerville, Tennessee

Tennessee's vice-president, a native of Illinois, came to Memphis for his medical degree and yielded to a yen to remain in the South for practice. Following his graduation from the University of Tennessee Medical School, where he was a member of A.K.K. fraternity, he continued in postgraduate work, in medicine, obstetrics, and pediatrics, while building up a laudable name and practice at Somerville, Tennessee. For these thirty years past he has cast his lot with that section, actively participating in masonic, church (Methodist) and service club (Lions) activities. A short time ago he and his son, Dr. John L. Armstrong, became co-partners in the Armstrong Clinic and Hospital, rendering a full-time up-to-date medical service to the people of the territory.

Dr. Armstrong is a fellow in the American Academy of General Practice, vice-president of the West Tennessee Medical and Surgical Society, a member of the Tennessee, Southern, A.M.A., and Consolidated Medical Assembly of West Tennessee associations.

DR. J. S. SANDERS
Leland, Mississippi

Dr. Sanders has not let his political and civic interests become altogether eclipsed by his professional responsibilities. The son of a doctor, Dr. Sanders takes just pride in the heritage of his family, who came to Mississippi and settled in Carroll County in 1830. The Sanders name has been identified closely with the history of Carroll County and the Mississippi Delta for more than a century.

After graduating from the Memphis Hospital Medical College in 1900 Dr. Sanders located in Coffeeville, moved to Beulah in 1917, and to Leland in 1920, where he has remained in active practice, but left in each place a record of progressive medicine. He organized the Yalobusha County Medical Society and was its first president, later served as president of the Washington County Medical Society, and vice-president of the Mississippi State Medical Association. His work also embraced the county health post for six years, and local surgeon for the I.C.R.R. for twenty-five years. Besides his memberships in the local, state, Southern, and national medical organizations, he is a charter member and past-president of the Leland Rotary Club, member of the staffs of Gov. Wright, and former governors White and Bailey. He is a Mason, a Shriner, a Presbyterian.

DR. ROBERT HOOD
Russellville, Ark.

Dr. Hood has felt that his place in the community life carries almost as great an obligation as his profession, and has yielded to the impulse to promote civic progress in a most worthy way. Unreservedly he has identified himself with the expansion and uplift of his town and section of the state.

A native Arkansan, Dr. Hood was graduated from the University of Arkansas School of Medicine, then interned in the Missouri Pacific Hospital in Little Rock. Later he took postgraduate work at Washington University.

Twenty years ago Dr. Hood established himself in practice in Russellville, doing general practice and surgery. Today he is the senior member of the up-to-date Hood-Young Clinic and chief of staff of St. Mary's Hospital there. He is a member of the Chamber of Commerce and has done much work in the Lions Club, at present serving as international counselor from his club. He is also chairman of his county welfare committee.

Dr. Hood has steadily risen in the organization of medicine, having served from 1939 to 1947 on the Arkansas State Board of Examiners, given his services on the Arkansas State Board of Appeals Selective Service during World War II, and is a trustee on the board of trustees of the Arkansas Polytechnic College. He has served as president of the Pope County Society, is a member of his state, the Southern, and the A.M.A. organizations. He is a Methodist and a 32nd degree Mason and Shriner. He also served on the legislative committee of the Arkansas State Medical Association.

Memphis is a city that makes you feel at home. Its people are very cordial. It has fine hospitals and a fine medical school and outstanding doctors. Its newspapers are the best and its interest is always keen in both local and national affairs. The Peabody Hotel is ideal for holding a medical meeting like the Mid-South. Memphis, down in Dixie, on the Mississippi, has the greatest growing possibilities perhaps of any city in our nation at this time.

Be sure to visit our exhibitors and express to them your appreciation for their services. The exhibitors are most helpful to every doctor who will allow them, and they have been very essential to the success of the Mid-South. We are grateful to them, and we deeply appreciate the fine work of Dr. Gilbert Levy who has handled the exhibits in such a fine manner as chairman.

DR. HENRY B. GOTTEN
Memphis, Tennessee

The secretary, affable, efficient, and on the job, is something of a specialist in secretaryships, for in addition to the responsibilities of the Mid-South Postgraduate Assembly he is also the able secretary of the Memphis and Shelby County Medical Society.

A graduate of the University of Tennessee in Memphis, Dr. Gotten went to Washington and Lee University for his pre-medical work, later interning at the Philadelphia General Hospital. His career was interrupted for three and one-half years while he was in the service of his country in the U. S. Navy. He was discharged as a commander.

Dr. Gotten, in addition to attending a volume of private practice is assistant professor in internal medicine at the University of Tennessee.

The J. A. Majors Book Company extends greetings to you in this issue of the journal. This company is always interested in your welfare. When you need a book of any kind, prompt and courteous service is their policy always.

DEATHS

DR. J. T. DOSTER

Dr. James Thomas Doster, Jr., owner of Doster Hospital and widely known Southern surgeon, died of a heart attack at his home, "The Colonnade," January 1.

Dr. Foster was found dead in bed. He was forty-eight.

Dr. Doster, who moved to Columbus in 1935 when he purchased the Fite Hospital from Dr. P. L. Fite, who retired at that time, remodeled and greatly expanded the medical facilities of that institution. In the past year he completed work on the installation of a cancer clinic at Doster Hospital, under the auspices of the American Cancer Society. He had been a member of the American College of Surgeons for fifteen years.

Dr. Doster received his education at the University of Alabama, and got his M.D. at Jefferson Medical College, Philadelphia.

He was a member of a prominent Birmingham family, where his late father, J. T. Doster, operated a large wholesale drug business.

He leaves his wife, Mrs. Katherine Doster; a son, James T. Doster III, 10; a daughter, Kate Doster, 13; his mother, Mrs. J. T. Doster of Birmingham; a brother and two sisters.

Services were held at St. Paul's Episcopal Church, conducted by the rector, the Rev. Cecil Jones. Burial was in Friendship Cemetery with Gunter Funeral Home in charge of arrangements.

DR. J. E. ELLIS

Dr. John Edward Ellis, 64, physician and civic leader of West Point and Clay County, was discovered dead in bed January 4 by a member of his family. Death was caused by a heart attack.

Dr. Ellis received his early education in Clay County and his medical training at Memphis Medical School. He has done all of his practicing of medicine in Clay County. He leaves his wife and a daughter, Mrs. Edward Grantham of near Atlanta.

DR. GEORGE MELVIN

Dr. George McMurtry Melvin, 63, died on December 1 at Gulfport, Miss., where he has lived since June, 1948. He was retired as Superintendent of the Veterans Facility at Roseburg, Oregon, in June 1948. He had been at Gulfport for fourteen years previous to being transferred to Roseburg in 1941.

He was the son of Edmond Waller Melvin and Elizabeth Ann McMurtry Melvin, of Camden, Madison County, Miss.

He leaves his wife, two sons, Dr. Edmond Melvin, of Gulfport, Miss., Mr. George Melvin, of Seattle, Oregon; three brothers, Rev. M. E. Melvin, D. D., of Oklahoma City, Oklahoma, pastor of Southminister Presbyterian Church; Mr. James Henry Melvin, of Jackson, and Dr. John W. Melvin, of Camden.

Burial was in the Gulfport Cemetery Saturday, December 4.

DR. T. T. BOX

Dr. T. T. Box, member of the Tennessee Coal and Iron Company Hospital staff, Birmingham, and for many years a practicing physician of Columbus, died Dec. 3 at Guin, Ala. Dr. Box, operated upon for a ruptured appendix, seemed to be recuperating when stricken with three successive heart attacks.

The general practitioner is survived by his wife, the former Miss Jane Lou Robertson of Columbus, eight children, one grandchild; and a number of less immediate relatives and connections in Lowndes County and Vernon.

Dr. Box was active in affairs of the Methodist church. He left Columbus in the latter '30's to work for the Alabama Health Department, transferred from Mobile County to the T.C.I. Hospital shortly after the outbreak of the late war. He was about 57.

DR. EDITH BALLARD

New Orleans' pioneer woman surgeon Dr. Edith Loeber Ballard died December 22 at the home of her daughter and son-in-law Mr. and Mrs. Charles F. Seemann.

She had been seriously ill since August.

Her husband, who survives her, is Marshall Ballard, editor of the *New Orleans Item* from 1907 until his retirement about a year ago.

Mrs. Ballard was 73 and a native of New Orleans. Her father was the late Dr. Frederich Loeber, a legendary figure in Southern medical circles. He was an intimate of Judah Touro and was the medical founder of Touro Infirmary.

From there she went on to Cornell University to study medicine. She won a Phi Beta Kappa key for scholarship and was admitted to membership in America's first chapter of Sigma Xi for her scientific research and paper on a typhoid epidemic at Ithaca, N. Y. The paper was published in the *London Lancet*, a scientific publication, and was widely reprinted while she was an undergraduate.

After receiving her medical degree in 1905, she interned for two years in New York Bellevue Hospital and spent her summers doing research.

In 1910, Marshall Ballard and Dr. Edith Loeber were married by the late Archbishop Jamen H. Blank in his private chapel.

Shortly after the Ballards were married, they moved to Bay St. Louis. Although Mrs. Ballard was out of medicine to raise her family she continued her interest actively. Until her death she was a member of the Orleans Parish Medical Society, the Louisiana State Medical Society, and the New York State Medical Society.

Two sisters, Mrs. Corinne Loeber Dunbar and Mrs. Lillian Loeber Frederichs, former city archivist, died during the past year.

Among Mrs. Ballard's survivors, in addition to her husband and sister, are three daughters, Mrs. John Watts of Gulfport, Mrs. Charles F. Seemann of New Orleans, and Mrs. W. L. Argus of Laurel, Miss., and two sons, Marshall Ballard, Jr., of Lumberton, Miss., and Samuel Ballard of New Orleans. Six grandchildren also survive her.

According to medical annals, Mrs. Ballard was one of the first women surgeons actually to perform surgery in the South, and it is believed that she was the first in New Orleans.

DR. JONAH NICHOLS

Dr. Jonah Nichols, 82, resident of Gulfport, died December 27 after suffering a heart attack Christmas morning.

Dr. Nichols had served in the medical profession as a nose and throat specialist and had practiced in California and Dallas, Tex., before opening his Gulfport office. He resided in Dallas for about thirty years.

His residence was in the home of his sister, Mrs. Catherine N. Scott. Also surviving him are two other sisters, Mrs. Margaret Brent, Frederick, Md.; and Mrs. Laura V. Moore, Philadelphia, Pa.; and a son, Fenton M. Nichols, San Francisco.

Born August 13, 1866, Dr. Nichols was a native of London County, Va.

The body was shipped to Dallas for burial.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

ORAL PENICILLIN IN INFANTS — George S. Husson, New York, N. Y., Journal of Pediatrics, 31:651-57, December 1947.

The author undertook to determine whether oral administration of penicillin was desirable in the treatment of infections in infants due to susceptible organisms. From a survey of the literature it was decided that an adequate therapeutic level of penicillin should be considered as not less than 0.06 units per cubic centimeter of serum.

Doses of 20,000 units of penicillin dissolved in 5 to 10 cc. of water in a formula bottle were given, followed by regular feedings. All 22 infants used in this experiment were afebrile and free of infection. They ranged in age from one week to five months. Their weight ranged from six to twelve pounds.

Serum levels of penicillin were noted at regular intervals from the start of the experiment. At one-half hour the average of six determinations was 0.88 units per cc; at one hour (22 determinations) 0.584 units per cc; at two hours (10 determinations) 0.360 units per cc; at three hours (22 determinations) 0.265 units per cc; at four hours (5 determinations) 0.045 units per cc. At six hours no penicillin was found in the serum of any of five infants tested. Thus in all determinations up to and including three hours after ingestion, adequate therapeutic levels of penicillin in the serum were obtained.

Some of the factors which may play a role in the production of high sustained levels of penicillin in the serum of young infants after oral ingestion, such as the relative lower acidity of the infant gastric juices and the relative inefficiency of the infant kidney, are discussed.

A STUDY OF THE ABSORPTION AND EXCRETION OF ORAL PENICILLIN IN CHILDREN — Milton Markowitz and Ann G. Kuttner, Irvington-on-Hudson, N. Y., Journal of Pediatrics, 31:195-202, July 1947.

"Penicillin tablets buffered with calcium carbonate were given to 70 rheumatic children ranging in age from six to fourteen years; a total of 100,000 units was given daily, in two doses. Penicillin blood levels were determined on blood samples taken thirty to sixty minutes after ingestion, using a modification of the Rammelkamp serial dilution method.

"When 50,000 units of penicillin were given on a fasting stomach one hour before breakfast the average level, based on over 500 determinations, was 0.20 unit per milliliter of serum. No detectable levels were found beyond two hours.

"In 55 of the 70 children, serum levels on different days were persistently uniform. The remaining fifteen exhibited marked day to day variations; in one child, for example, the levels on different days ranged from 0.60 to 0.50 units per milliliter. When 50,000 units of penicillin were given immediately before breakfast, the average peak level was 0.15 unit per milliliter. In two subjects 50,000 units of penicillin given immediately after breakfast produced negligible serum concentration.

"Fifty thousand units given immediately before the evening meal resulted in an average serum level of 0.12 unit per milliliter in 24 subjects. When 50,000 units were given two and one-half hours after the evening meal to fifteen subjects, an assayable serum level was found in but one instance.

"This study indicates that satisfactory penicillin serum levels can be obtained in children with oral doses of 50,000 units given after a fast of at least four hours."

Comment: The two articles above are of considerable interest, particularly to those of us who do pediatrics, and since the family physicians see so many children, I am sure this would be quite interesting to them because of the fact that they can give penicillin in a similar manner as indicated by these two authors and get good results. Of course, we would not rely on that type of medication altogether for any great length of time, but it is well to know that you can give penicillin orally and get good results on many occasions.

State Board of Health

Felix J. Underwood, M. D.

LOOKING AHEAD IN PUBLIC HEALTH*

by Charles C. Wilson, M.D.
Professor of Education and Public Health
Yale University, New Haven, Conn.

Most individuals have a natural curiosity about the future which relates to both personal and professional affairs; we would like to know what the future will bring forth. Will we maintain our health, our jobs and our homes? Will our children be happy, successful citizens? Will peace be their lot or will they at some time in the future be compelled to fight an unthinkable type of war? Professionally, we would like to know what progress will be made in public health during the coming years. Will our dreams of abundant life and exuberant health for all individuals be realized? Will progress in the future be as rapid as in the past? Those with a deep, sincere concern for the public health will raise an additional question: How can public health progress be accelerated?

There is neither a crystal ball for us to gaze into nor any other mysterious way by which we can predict exactly what is to occur in the years to come. But we can learn from the past, we can discern trends, and we can plan for the future. What happens during the next decade following and the decade after that will depend in part on the foundations which we build now.

During this session I would like to review with you some areas of health progress and point out some of the factors responsible for such progress. Then I shall indicate differences between present day problems and those of the past. I shall conclude with a brief statement of two specific problems which need to be solved if public health progress is to be as rapid and as extensive as we hope it will be. In this way I think we shall get a peek at the unforseeable future.

Evidence of Health Progress. Data compiled from vital statistics provide ample evidence of remarkable improvement in the health of our nation since the beginning of the twentieth century. A few outstanding facts may be tabulated as follows:

1. Annual deaths per 100,000 population have decreased from 17.2 in 1900 to 1.06 in 1945
2. Life expectancy has increased from 49 years in 1900 to more than 65 years in 1945
3. Infant mortality has decreased from 100 per 1,000 live births in 1915 to 38 in 1945
4. Maternal mortality has decreased from more than 6 per 1,000 live births in 1915, a rate which continued or was exceeded up through 1934, to less than 2 at the present time
5. Cases of smallpox have been few in recent years, and will remain at a low level so long as we are successful in securing widespread vaccination. Diphtheria, too, has declined rapidly and can be controlled by widespread use of toxoid
6. Tuberculosis deaths have decreased from almost 200 per 100,000 in 1940 to 40 in 1945.

Certain diseases which produced ravaging epidemics in past years have been eliminated or successfully controlled. As recently as fifty-five years ago, in 1893, typhus caused 200 deaths in New York City. One hundred years ago cholera caused 5,000 deaths in the same city. Less than 100 years ago, in 1853, 8,000 residents of New Orleans died from yellow fever. Deaths from typhoid and paratyphoid fevers have been reduced about 99% since the turn of the century.

Progress in improving the nutritional status of American people has been less spectacular but nevertheless important. Severe cases of rickets, scurvy and pellagra are far less common than in previous years, although thousands of individuals still suffer from dietary inadequacies. We have made progress, but much remains to be done.

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*Presented by Charles C. Wilson, M.D., professor of Education and Public Health, at the twelfth annual meeting of the Mississippi Public Health Association, Jackson, Mississippi, December 7, 1948.

Although the figures and statements just presented refer to the United States as a whole, your own vital statistics indicate that progress has been made here in Mississippi. Some of these figures were included in a stimulating and informative article entitled "Twenty-five Years in Maternal and Child Health" by the Executive Officer of the Mississippi State Board of Health, Dr. Felix J. Underwood. As revealed in this report, you have been contributing to America's health progress, and I am sure that you will continue to do so.

Factors contributing to progress. Analysis of past accomplishments reveals that successful efforts have resulted from a variety of factors and influences. There has been no panacea or magic formula, but there has been much hard work of many different kinds by a variety of professional groups. Research workers, physicians, dentists, nurses, public health officials, educators, sanitarians, social workers, hospital administrators, voluntary health agencies, and many others have all played a part in the achievements of the past. Some have increased our knowledge of disease and its prevention; others have helped to extend and improve health education; still others have helped to provide necessary services to needy individuals. Our understanding of what has taken place can be clarified by considering for a moment the contribution of each of these three types of activities; knowledge, health education and services.

Increased scientific knowledge has provided the foundation for public health achievements. I will make no attempt to even list the many startling discoveries concerning the human body and its functioning and the processes of disease prevention and of treatment that have contributed so much to the improvement of health. Suffice it to say that reductions in the death rate, in infant and maternal mortality, in mortality from specific disease, and improvement in nutrition, have been possible only because of our increased knowledge. We have learned how to prevent disease through providing safe water supplies, guarding our foods from contamination, and through the proper disposal of sewage. We have learned to use vaccines and toxoids to prevent certain diseases. Modern methods of nursing and new procedures in medical and surgical practice have contributed to health progress. All of these life-saving procedures are possible because of increased scientific knowledge.

The need for still greater knowledge is revealed by some of our unsolved problems. We do not know surely how to prevent the common cold. We do not know how to prevent cancer. Poliomyelitis continues to occur because of our lack of knowledge concerning how it is spread and how it can be prevented. We would like to prevent all dental decay, but we don't know how this can be done. And we haven't knowledge that will permit us to prevent or cure all mental disease. Health progress in the future will depend in part on the results of present-day research.

Part of the credit for post-health accomplishments goes to health education, the procedure by which we help individuals to understand the factors that influence personal and community health and to develop practices which contribute to the maintenance of health. Health education has helped to secure public backing for community sanitary regulations. It has helped to increase the utilization of knowledge concerning disease prevention by inoculations, for such knowledge was of little practical knowledge until parents were taught that children should be vaccinated and immunized at an early age and until their attitudes toward such procedures were influenced by educational procedures. Health education has helped to improve the dietary practices of American people. Education of parents and prospective parents concerning the care of infants has contributed to the reduction of infant mortality. Health education, provided by schools, by health departments and by voluntary health agencies, has been an effective means of improving health and will continue to be an essential factor in health progress. As will be pointed out later, health education will undoubtedly deserve an even more important place in future health programs than it has held in the past.

Our health progress has been due partly to the provision of necessary health services to needy individuals. Efforts to provide such services must be recognized as an integral part of public health efforts. Neither scientific knowledge nor health education can be fully effective in improving health unless they are supplemented by adequate provision of preventive and curative services for all individuals. Illustrations of this point are hardly necessary, but let me tell of the mother who had learned of the value to young children of smallpox vaccination and diphtheria immunization. She wanted her children protected from these diseases, but stated pitifully, "I know my three children should have the treatment, but I just can't afford to get it for them." We may get a similar statement relating to the need for milk and other nourishing foods. Our scientific knowledge and our health education are not effective in promoting health unless we also set up community machinery for the care of all individuals who cannot secure necessary health services on their own initiative and at their own expense.

Progress in the future. The three factors of 1) scientific knowledge, 2) health education, and 3) provision of health services to needy individuals have been stated as responsible for past health progress. It seems reasonable to predict that these same factors will determine future progress. We will move forward by increasing our knowledge through research, by extending that knowledge through health education and by applying that knowledge through providing health services. However, as we look ahead, we will recognize that we have different viewpoints and different problems than we had in 1900 and that these may require that we use somewhat different approaches.

Early public health measures were directed toward the prevention and control of communicable diseases, and these are still important public health activities. But a glance at a list of the ten leading causes of death in 1945 shows clearly that communicable diseases are not the important causes of mortality that they were at the beginning of the century. The mortality picture reveals the importance of measures directed toward preventing heart disease, minimizing the ravages of cancer and stemming the slaughter of accidents. These are conditions that cannot be corrected through safeguarding water supplies, providing adequate sewage disposal, or the inoculation of specific vaccines or toxoids. Efforts to combat these and many other conditions now affecting health, require more and better health education aimed at helping each individual promote his own health by living in accord with modern principles of personal hygiene.

Part of our different approach to public health is due to the changing composition of our population. It is predicted that by 1960, one-third of our people will be forty-five years of age, or older. The health problems of this age group will require increased attention.

In the past, much of our public health effort has been directed toward problems revealed by mortality statistics; we have fought to lower infant mortality, maternal mortality and mortality from conditions that cause large numbers of death, like tuberculosis. These problems need our attention, but so also do problems which infrequently cause death but are responsible for sickness, defect, unhappiness and incompetency. We need to be concerned with improving diets, with preventing dental decay, in decreasing blindness and deafness, and in promoting mental health. Problems of chronic disease and disability, and of accidents, must be considered as important and as worthy of attention as those of an acute nature. Results of efforts directed toward these problems may not show up in mortality statistics, but they will contribute to the general state of health of the American people. Our interest in such problems will reveal a broad concern for improving life rather than a limited concern for saving lives.

Let me briefly refer to evidence of progress in relation to three health problems in which new methods of attack appear to be bearing fruit, namely dental caries, childbirth and cancer.

Within recent years, it has been learned that dental caries in children can be reduced approximately 40 per cent by the topical application of a 2 per cent sodium fluoride solution. In numerous communities educational programs are being conducted to inform parents and children of the value of this form of treatment and to encourage them to secure it from their own dentist or a clinic. This procedure will not save many lives, but it will contribute much to the happiness and well-being of many individuals. Now that we know how a considerable amount of dental decay can be prevented we must find ways of utilizing this knowledge for the benefit of all. And we must continue our efforts to determine how a still greater amount can be prevented.

Perhaps some of you have read of the interesting work of Dr. Grantly Dick Read relating to the reduction or elimination of pain associated with childbirth. Throughout the centuries concepts of the painful nature of childbirth have been emphasized in our literature and in our conversations. Dr. Read has suggested that much of the pain or discomfort is caused by fear which produces tension, and that this fear can be overcome to a great extent by education of the prospective mother. The plan is to teach women what happens when birth occurs, how they can assist in the process, how they can relax at appropriate times, and how they can overcome fear. An informative account of the results of this plan in the care of 156 cases was recently reported. In brief, good results were obtained in 80 per cent of the cases. Included in the report is the statement, "In our study we have delivered five women who have steadfastly denied that they felt anything which could be classified even as discomfort. These women were alike only in that they appeared completely fearless during labor."

Further experimental studies are needed, but even now we can consider the benefits that may accrue of our efforts in maternal health are broadened from that of solely preventing death to that of making childbirth a normal, satisfying experience with a minimum of discomfort.

Since we are faced with a gradually ageing population it is gratifying to report progress in combating one of the serious health problems of older people, cancer. A recent report tells of progress in the state of Connecticut where for many years a division of cancer control of the State Department of Health has been working coöperatively with the medical profession and with tumor clinics throughout the state. A registry of all cases of cancer is kept and accurate statistics relating to treatment and survival have been obtained. The report states, "One of the most encouraging features of a functioning registry which includes active follow-up of all living patients is the knowledge of the large number of persons who have survived treatment for more than five years. In Connecticut, there are over 3,000 living five to twelve years after treatment. Expressed another way, there are 174.5 persons out of every 100,000 in the population who have survived treatment for cancer for more than five years—128.9 per 100,000 males and 220.1 per 100,000 females. Also living in Connecticut are 9,000 other persons who have been treated for cancer within the last five years. Each passing year a larger number and a larger percentage of the total reach the five year survival mark, which often means safety."

The cancer problem presents a real problem to all concerned with the health of the people. Much can be done to prevent untimely death from this cause through 1) education of all people regarding the value of periodic medical examinations and the particular need for medical advice when any signs of symptoms of cancer occur, and 2) making available to people opportunity for medical examination and for appropriate treatment.

In conclusion, let me outline two problems which need solution if public health is to progress rapidly and surely, one dealing with the development of teamwork and the other with securing effective leadership.

Public health progress will result from the coordinated efforts of practicing physicians and dentists, hospitals, nurses, public health administrators, sanitarians, health educators, laboratory workers, statisticians, social workers and plain, ordinary citizens. It will require close working relationship between official agencies and voluntary agencies. How to develop teamwork between these various individuals and groups is a challenge to all concerned with public health. The most practical solution so far offered is the organization of community health councils in which all have representation and through which each contributes to the over-all community program. Such machinery helps each community to determine its assets and liabilities, to plan ways for preventing undesirable duplication of effort and to devise ways for filling in gaps. The community health council provides democratic procedures for solving community health problems. Teamwork will produce better and quicker results than numerous isolated or uncoordinated efforts.

Effective leadership is essential to the further improvement of expansion of public health and must be so developed that is serves all people in all parts of our country. Most of you are familiar with the report "Local Health Units for the Nation" and the recommendations it contains. This stimulating document describes present conditions in these words, ". . . . only two-thirds of the people in our country are today under the umbrella of full time local health protection, while approximately forty million are excluded by horse-and-buggy political boundary lines, or by the economic stringencies of the areas in which they happen to live. . . . . Further, the provision of health services, whether full or part time, is now essayed by 18,000 or more counties, cities, towns, villages, or districts. These local health administrations are inherited from the past. They came into being, like many good and bad things in a young and growing country, without benefit of policy. We know now that we can afford nothing less than coverage of every population and area unit of our nation with competent local health service." The report continues with specific suggestions for obtaining such service for each state in the country.

A national committee can provide information and suggest standards, but the actual development of concrete plans for securing desirable administrative units for public health must be carried on by state and local people. Each community must be encouraged to obtain answers to such questions as 1) What types of public health personnel, and how many, do we need? 2) What qualifications should they meet? 3) Is our city or county large enough to permit the organization of a full-time public health unit or should we combine with one or more adjoining communities? Study of these questions can advantageously occupy the time and attention of a community health council.

There probably is no single pattern for the organization of public health units, but some plan needs to be formulated to see that the advantages of qualified public health leadership and public health protection will be available to all people.

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News and Comment

INVITATION

Dr. F. M. Acree, president of the Mid-South Postgraduate Medical Assembly, is having the annual past-presidents' dinner at 7:30 Wednesday night, February 9, 1949, at the Hotel Peabody.

DR. MATAS' SISTER DIES

We offer our very sincere sympathy to Dr. Rudolph Matas of New Orleans, our dean of the surgical world, in the loss of his sister in Spain, age 79.

CANCER CONFERENCE

The American Cancer Society in conjunction with the National Cancer Institute of the U. S. Public Health Service will sponsor a national cancer conference at the Hotel Peabody, Memphis, Tennessee, February 25, 26, and 27, 1949. This Conference will be composed of from 300 to 400 invited delegates—the country's outstanding clinicians, investigators, professional and lay educators in cancer, and cancer control officials—meeting in general sessions as a group and in small round-table panels to discuss quite frankly many of the controversial aspects of cancer and to offer such constructive criticism in the cancer control program currently under way in this country as may be necessary.

All physicians in Mississippi are cordially invited to attend.

FOR BETTER RECORDS

The Mississippi State Medical Record Librarian Association is promoting a program throughout the state to aid in training record department employees; thus aiding hospitals to meet standard requirements. During the current year beginning February, the state-wide study group clubs will meet according to regions. These regions are the same as the State Hospital Association. Information may be obtained from Mrs. Martha Wood, Houston Hospital, Inc., Houston, Mississippi. In sickness the history of the case is very important in making the diagnosis. The keeping of the records in a way that makes them readily available is of great importance. All hospitals and doctors should appreciate these courses.

NORTH MISSISSIPPI HOSPITAL

The officers for year 1949 elected at regular meeting of Staff of North Mississippi Community Hospital were as follows: chairman—Dr. L. L. McDougal; vice-chairman—Dr. B. C. Cantrell; sec'y.-treas.—Dr. F. K. Tatum.

Regular monthly meetings are held at the library of the hospital the second Monday night of each month at 7:30 p.m.

ANNOUNCEMENTS

Howell D. Woodson, M.D., announces the opening of his office for the practice of urology and urological surgery, suite 7, 1167 Madison Avenue, Memphis, Tennessee.

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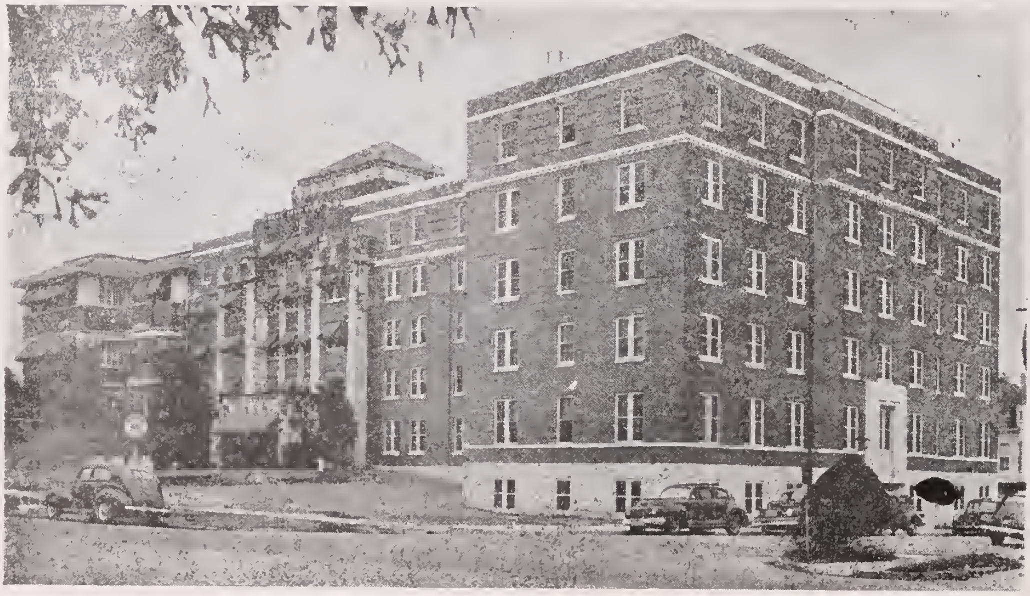

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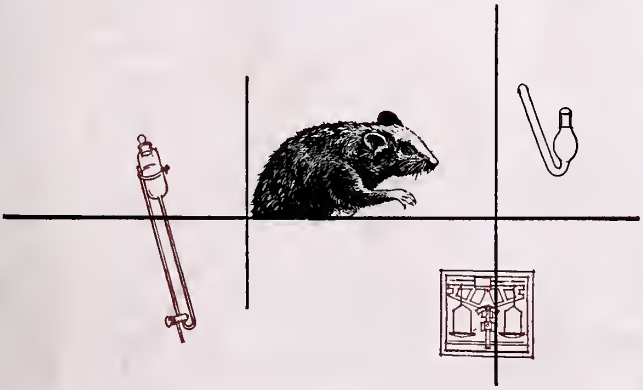

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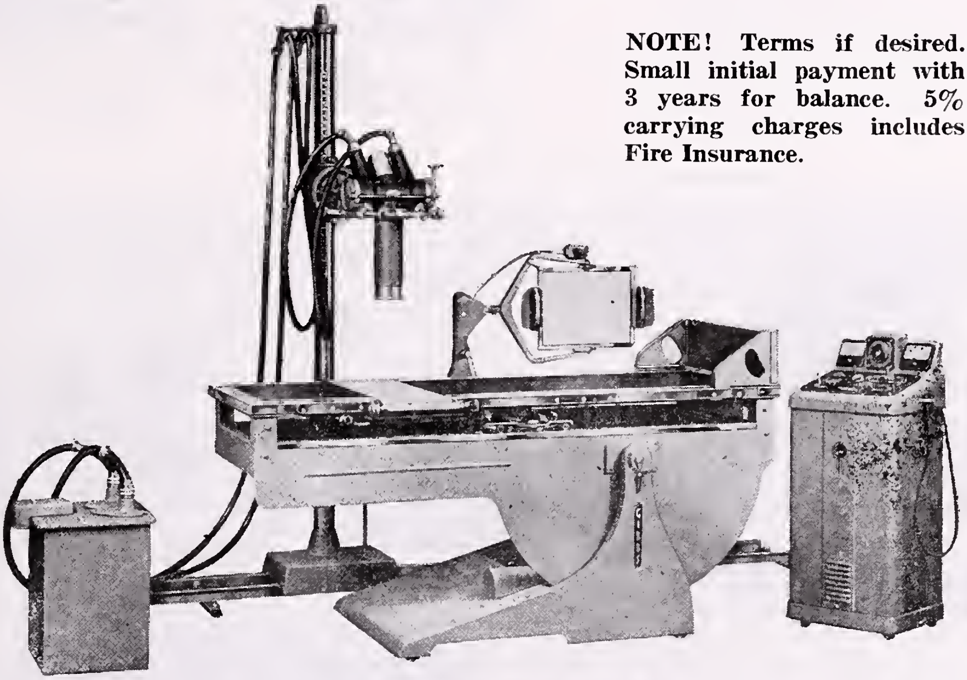

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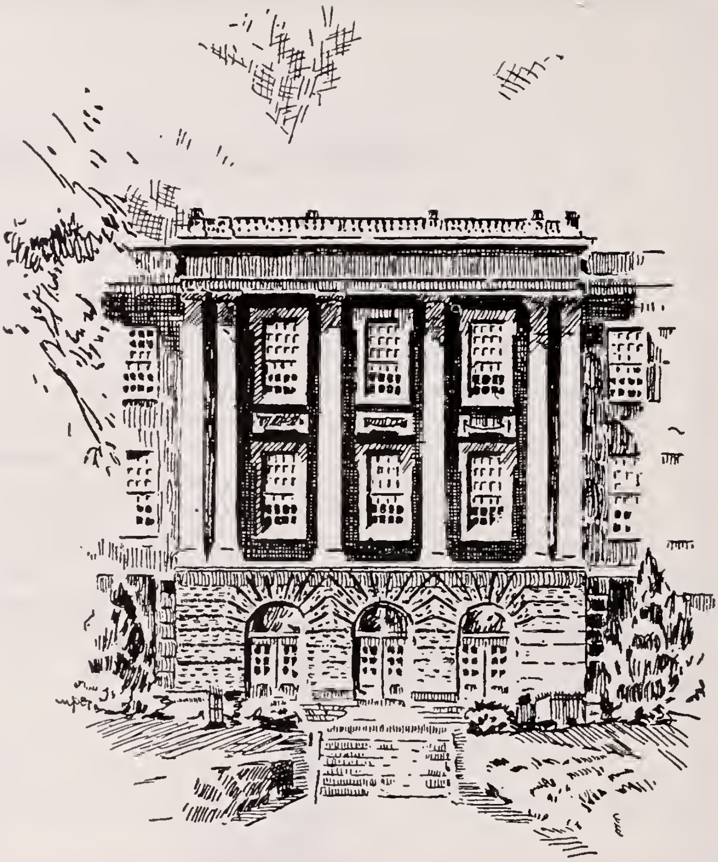

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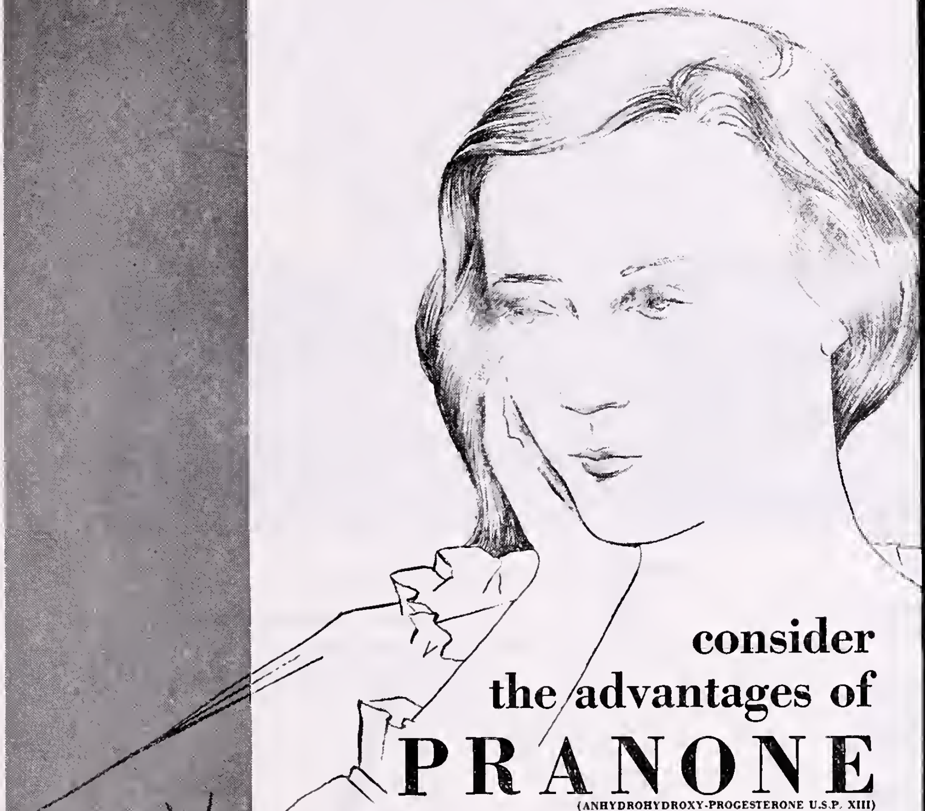

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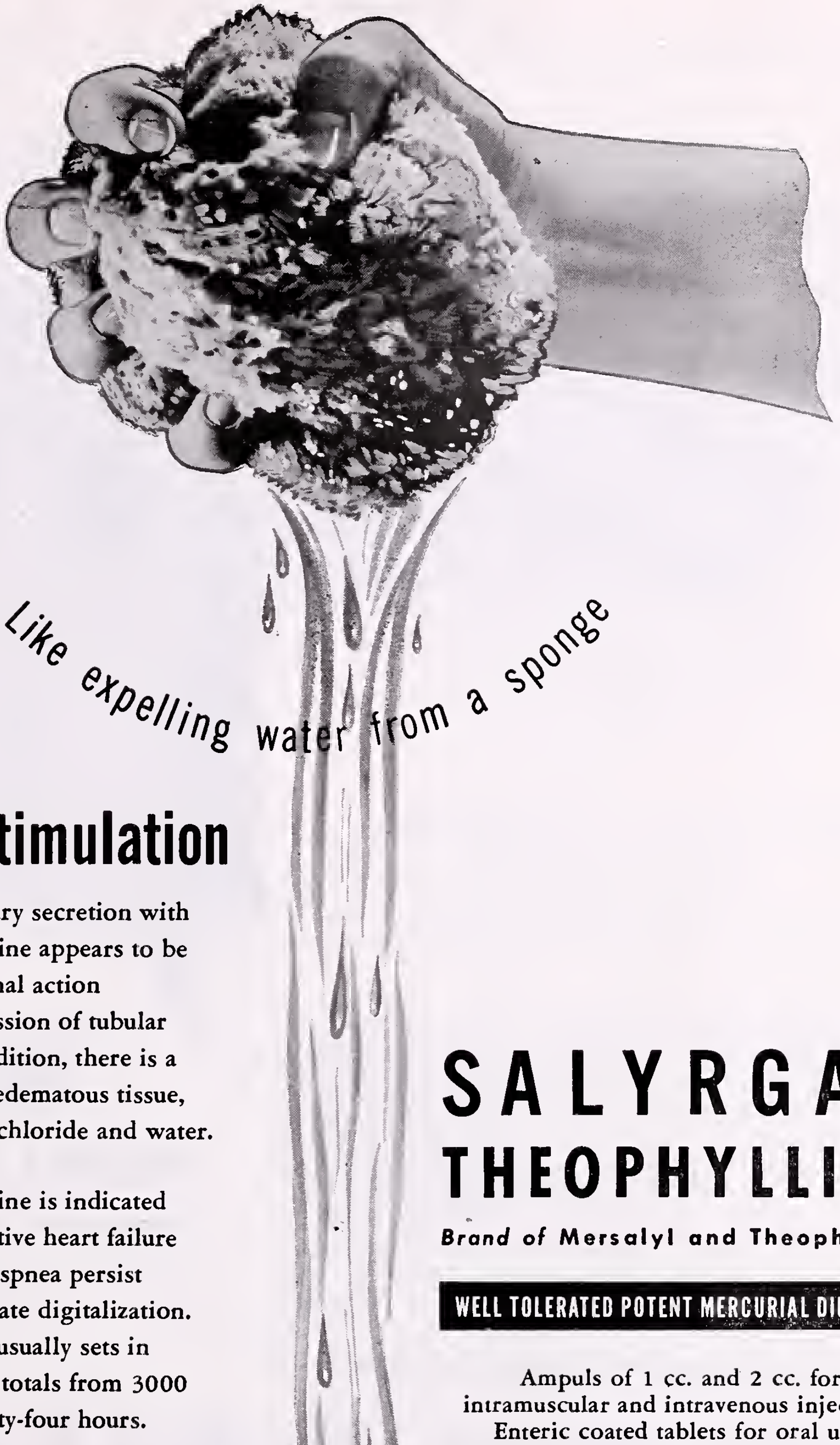
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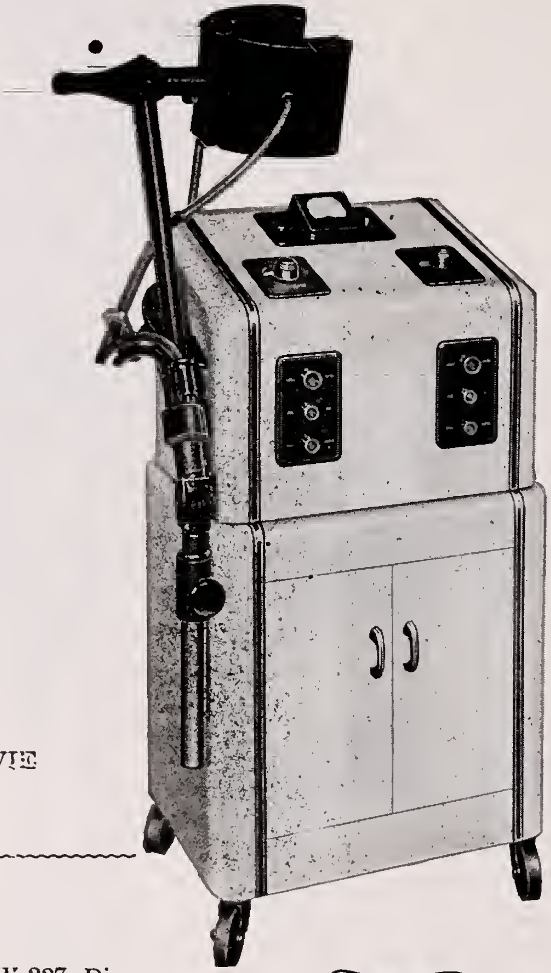

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Diagnostic Procedures in the Study of Jaundiced Patients*

ALBERT M. SNELL, M.D.
Division of Medicine,
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At the time I selected this title, I intended to present a critical review of the diagnostic methods currently used in the study of jaundiced patients at the Mayo Clinic on the gastro-intestinal service at one of the hospitals. I planned to refer particularly to the accuracy of these tests as shown by subsequent necropsy and surgical findings. Unfortunately the survey to date has raised at least as many questions as it has answered and it is accordingly being continued during the current year in an attempt to settle the questions. I shall present at this time some observations concerning certain diagnostic methods in the light of last year's experience on this service and point out some clinical lessons learned in this space of time.

The Diagnosis of Posthepatic Biliary Obstruction Caused by Neoplasm

In times past, such a diagnosis was at best a hollow victory since the most that could be offered the patient was palliative cholecystgastrostomy. In fact it was once considered good practice to observe the patient for several weeks with the thought that if intrahepatic jaundice was present it would either clear up or undergo some variation during this period, whereas if the jaundice were due to carcinoma of the ampulla or pancreas, it would either remain constant or become deeper. With the advent of the Whipple operation the problem of diagnosis has changed. Whatever possibility of cure this radical procedure may offer requires both early and exact diagnosis. The surgeon may in fact wish to be so certain of the presence of a small obstructing lesion at the ampulla that he will be willing to proceed with resection even if the lesion is not satisfactorily demonstrable to the examining hand.

What are the accepted diagnostic criteria in such a case? Ideally, there are three: (1) complete and lasting mechanical obstruction to biliary flow, (2) the presence in the blood of biliary constituents other than bilirubin and (3) exact exclusion of other causes of jaundice. Reduced to practical diagnostic terms, this means (1) painless or virtually painless jaundice usually associated with pruritus of marked degree; (2) a palpably distended gallbladder; (3) a concentration of serum bilirubin in excess of 10 mg. per 100 cc.; (4) an elevated concentration of total cholesterol and alkaline phosphatase and (5) no bile in the duodenal contents or stool, and no more than 5 to 10 Ehrlich units of urobilinogen in feces.

These data are essential to accurate diagnosis and cannot be safely overlooked, but unfortunately they are sometimes difficult to verify. An absence of bile in duodenal contents obtained by duodenal drainage cannot be accepted at face value unless there is roentgenologic proof of the location of the tip of the tube; repetition of the test therefore may be necessary. Urobilinogen studies on the urine and feces are exceedingly valuable in the doubtful case. If these studies are to be done at all forty-eight to seventy-two-hour collections of material are preferable to those for shorter periods of time. Even with the greatest care in collection, the results are not always in agreement with findings on duodenal drainage. In such cases, the results of urobilinogen studies should take precedence, I believe.

How dependable are these criteria in practice? The recent review of Hoffbauer[1] and his associates taken together with recent data from the clinic and covering a total of more than 50 proved cases of neoplastic obstruction give a reasonable satisfactory answer. The mean value for the one-minute direct-reacting serum bilirubin in the group was 11.4 mg. per 100 cc.; there was complete or nearly complete exclusion of bile from the duodenum in more than three fourths of our cases, and there was an increase in blood cholesterol and alkaline phosphatase or both in about the same percentage. The various flocculation tests, used to exclude damage to the parenchyma of the liver, came off well in these two studies, giving at most only weakly positive responses in about 10 per cent of the total series. Considered from the angle of the anatomic lesion found, our own series showed the most complete fulfillment of the diagnostic criteria in patients with tumors of the ampulla. In cases of carcinoma of the pancreas, the data were not quite so clear-cut and in cases of carcinoma of the bile ducts there were often traces of bile in the duodenum. In cases of carcinoma of the gallbladder although the other findings were conclusive enough, bile was necessarily excluded from the intestine. To summarize then, I can say that it is possible by using all available diagnostic means to give a surgeon assurance of neoplastic obstruction in about 85 to 90 per cent of cases in which it is found at exploratory operation. The advantages of this degree of accuracy when so extensive a procedure as the Whipple operation is contemplated are obvious.

---

*Read at the meeting of the Mid-South Postgraduate Medical Assembly, Memphis, Tennessee, February 7 to 10, 1949.

Studies of the Serum Colloids in Jaundice

The flocculation and turbidity tests are a fairly recent addition to the diagnostic armamentarium in the study of disease of the liver. Those best known to American workers are the cephalin-cholesterol flocculation test and the thymol turbidity test; there are numerous others based on the same general principles, of which may be mentioned the Takata-Ara test, the formal-gel, the colloidal gold and colloidal red tests. None of these tests measure liver function as such; they merely give evidence of certain poorly understood alterations in the serum colloids which are not necessarily diagnostic of liver disease, although hepatic parenchymal lesions are most commonly responsible for such changes. At least three known variations in the serum proteins act singly or in combination to produce positive results in these tests; these are reduction in the amount of serum albumin, an elevation in the amount of serum globulin, and the presence of certain lipoproteins in the serum; for example, the two latter changes are necessary to produce positive results on thymol turbidity tests.

Although these tests are very useful in practice, there are both theoretical and practical objections to them, not the least of which is that they all require the use of unstable reagents, sometimes difficult to prepare in a reproducible form.

A simple accurate procedure employing stable reproducible reagents is needed for the evaluation of a single constituent of serum, the concentration of which is known to be characteristically altered in hepatic disease. In the search for such a test, it has been considered that the gamma globulin fraction of serum offers many features desirable in an assay objective: (1) the alternations in serum protein occurring in liver disease seem most specifically related to the gamma globulin fraction; (2) electrophoretic studies have shown that the gamma globulin fraction is free from the lipoid and lipoprotein known to migrate with the beta globulin fraction, and (3) concentrations of gamma globulin in the serum may be significantly altered without recognizable changes in total protein, total globulin, or albumin-globulin ratios as these are commonly determined.

Kunkel and his associates[2] recently described a rapid turbidimetric procedure for the estimation of gamma globulin in serum. His method is based on the principle of precipitating gamma globulin as a finely turbid suspension by the addition of highly diluted serum to a solution of zinc sulfate of lowionic strength, buffered with barbital and sodium barbital to a pH of approximately 7.4. Turbidity values are expressed in arbitrary units, based on the comparative turbidity of a standard suspension of barium sulfate similar to that employed for the estimation of thymol turbidity. By electrophoretic migration and other studies, Kunkel has been able to show that the precipitates so obtained consist chiefly, though not entirely, of gamma globulin. Variations in serum lipid or in serum albumin are not factors which interfere significantly.

Kunkel's original studies indicated a range of 2 to 8 units of gamma globulin in normal serums as indicated by turbidimetric means. High turbidimetric values of gamma globulin were found in cases of infectious hepatitis, hepatic cirrhosis and other states associated with increase in the gamma globulin fraction. In infectious hepatitis, increase in the turbidimetric values of gamma globulin in the serum tends to follow a positive thymol turbidity reaction in a parallel manner, and to continue after the thymol turbidity reaction has shown normal conditions.

The same worker and his associates also have devised a similar turbidimetric method for the determination of serum lipids. This calls for the addition of diluted serum to a solution of phenol and sodium chloride. The degree of turbidity produced can be translated into terms of total serum lipids by appropriate calculations. This easy and inexpensive procedure gives values for lipid which parallel closely the values of serum cholesterol and of alkaline phosphatase as determined by the usual methods.

The combined use of these simple procedures for the estimation of gamma globulin and serum lipid provide an excellent screening procedure for the rapid tentative classification of jaundiced patients, and one which has proved clinically useful[3]. In obstructive jaundice, the values for gamma globulin are normal, while those for lipid are sharply increased. In primary hepatocellular injury, the situation is exactly reversed. In late infectious hepatitis values of both globulin and lipid may show increases. The place of these tests in the usual battery of studies used to differentiate obstructive from parenchymatous jaundice is shown in table 1. To date, our impressions of the two new methods mentioned in preceding paragraphs is favorable. Variations in the globulin fraction are clear-cut and dependable but those pertaining to lipid show a much greater range. The tests are almost ideally adapted to the small laboratory and when used with a proper appreciation of their limitations may be extremely useful. They do not, as has been said in regard to other such studies, furnish a substitute for clinical judgment.

TABE 1

Anticipated Results of Certain Tests in Jaundiced Patients

	Normal	Extrahepatic obstruction	Parenchymatous liver disease
Cephalin-cholesterol flocculation	{1+	{1+	}1+
Thymol turbidity, units	0-4	0-4	4-16
$ZnSO_4$ turbidity, units	9-12	{16	16-60
Lipid turbidity, mg. per 100 cc.	600-700	{700	}700
Total cholesterol mg. per 100 cc.	180-200	}225	{225
Cholesterol esters, per cent	50-65	}50	{50
Alkaline phosphatase, units per cu mm.	1-4	}10	{10
Blood platelets, 10^3 per cu mm.	150	30-90	}150
Fecal urobilinogen, mg. per 24 hr.	{100	0-5*	18-300

*Neoplastic disease.

Thrombocytopenia in Hepatic Disease

Abnormal capillary fragility as shown by the familiar Rumpel-Leede test has often been noted in jaundiced patients in the past. With the discovery of the prothrombin defect so commonly found in jaundice, interest in the matter lagged and little further attention was paid to this finding. Similarly there have been one or two clinical reports of thrombopenia associated with liver disease during the past two decades but this was generally regarded as a chance finding of no particular importance. Early in 1948 Whitesell and I[4] became interested in the subject as a result of observations in a small group of cases of postnecrotic hepatitis. Subsequently about 70 cases, 29 of obstructive jaundice and 41 of primary parenchymatous disease of the liver (hepatitis or cirrhosis) have been studied. The number of blood platelets was reduced in only 4 of the first group of cases and in 1 of these 4 capillary fragility was noted also. In 37 of the 41 cases of primary hepatocellular disease thrombopenia, abnormal capillary fragility or both were found. In this group hemorrhagic tendencies, possibly due to the platelet deficit, were encountered frequently. In most patients the bleeding time was prolonged and clot retraction delayed.

No constant relation was found between the platelet level, and the degree of capillary fragility or the tendency to bleed, neither was there any constant relation to the prothrombin time noted in this series. In general, a reciprocal relation was found between platelet level and the value of the globulin fraction of serum, and the thrombopenia was associated quite constantly with high values for gamma globulin as shown by the turbidimetric procedure described previously. Parenthetically, study of specimens removed by sternal aspiration has been shown that formation of platelets is normal in these cases and it has been suggested that the difficulty lies in the maturation of the circulating platelet.

These observations[3], to be published in detail shortly, bring up at least three important clinical points. The first is the probable relation of platelet deficiency to some of the obscure hemorrhagic phenomena in hepatic disease; the second, the additional support for a diagnosis of primary liver disease furnished when thrombopenia is demonstrated, and third, the necessity of excluding the presence of hepatic disease when thrombopenia is found in any patient who has a hemorrhagic disorder. This is particularly necessary if splenectomy is contemplated. The latter point is of particular significance since it has been shown that the platelet deficit in hepatic disease is not altered by splenectomy and neither is the hemorrhagic tendency corrected. It is, in fact, likely to be made worse.

Aspiration Biopsy

Within recent memory a wide margin of error in the diagnosis of liver disease was taken for granted and the finer points in the pathology of the liver were left in the main to the consideration of the pathologist at necropsy. At present, with the use of liver functional "profiles" a reasonably accurate estimation of the degree of liver injury can be made in a large majority of cases of hepatic disease. Correlation between observed functional disturbance and the histologic appearance of the liver has not been particularly good, however, chiefly because methods of physiologic appraisal are rather crude and limited in scope and because the pathologic material available for study represented as a rule only the end stage of the disease process. This defect is being remedied gradually by the efforts of a small group of individuals who have studied the diagnosis and course of hepatic disease by means of aspiration biopsy. The value of this method as a means of investigating the natural history of liver disease is now thoroughly appreciated.

The shortcomings of needle biopsy of the liver are recognized as well, chief of which are the smallness of the sample as compared to the large size of the organ and the present lack of any adequate methods of histochemical study of the tissue removed. Nevertheless much has been accomplished by use of the needle biopsy technic; not the least valuable contribution is a fairly complete picture of pathologic changes in the course of infectious hepatitis and in the various types of cirrhosis.

As a diagnostic tool, aspiration or needle biopsy of the liver is still not used as widely as it should be. At the Mayo Clinic for instance, we have found it of great value in the detection of hemochromatosis and fatty liver, diagnoses which cannot be made safely without histologic evidence. In the demonstration of metastatic carcinoma, biopsy also has been extremely useful although by no means infallible. Melanoepitheliomas, hepatomas and adenocarcinoma have been demonstrated repeatedly on our service by biopsy, thus it has saved needless expense and unnecessary surgical procedures for many patients. In this diagnostic field, needle biopsy has in fact largely supplanted peritoneoscopy. Finally, the severity and extent of hepatocellular damage and hepatic fibrosis have been demonstrated in many patients in which the true state of the liver remained in doubt. The method is not entirely without danger. The risk is chiefly from hemorrhage at the site of puncture but I believe that with proper precautions, particularly in respect to determining the prothrombin time before the specimen is removed, the procedure does not carry a hazard of more than 1 per cent.

TABLE 2
Stricture of the Common Bile Duct

Year	Incidence*	Total Cases
1943	39	40
1944	55	61
1945	73	80
1946	86	97
1947	93	105

*Incidence by years (per 100,000 patients).

Stricture of the Common Bile Duct

One of the rather unexpected developments of the postwar years has been the rising incidence of postoperative stricture of the common bile duct. Our year's survey of jaundiced patients, to which reference has been made (table 2) revealed the surprising fact that stricture was the second commonest cause of obstructive jaundice noted; it was exceeded in frequency only by gallstones. The series reported by Hoffbauer[1] and associates also showed an abnormally high incidence of stricture. These figures are in sharp contrast to the incidence reported from British clinics where stricture is apparently quite rare. Walters and Phillips[5] also have commented on this increasing frequency of stricture and have noted these facts: (1) that the 67 patients on whom Walters had operated for stricture of the common bile duct from 1940 to 1947 had had 126 previous operations on the bile passage and (2) that 19 additional operations were required on these same 67 patients following the original attempt at plastic repair during this period of time. The gravity of such a situation requires no comment; it fully warrants Walters and Phillips' comment: "Excellent exposure and lighting and familiarity with variations in the anatomy of the biliary tract and the hepatic artery and its branches are essential to safe biliary surgery. The occasional injuries which result under the best operating conditions should be recognized, for they may be repaired immediately with greater safety and better results than at a secondary operation."

The physiologic and pathologic consequences of neglected or long-standing strictures of the duct are of unusual interest. As has been noted by numerous observers, hepatic function deteriorates progressively in such cases and it is not uncommon to encounter a functional profile of the liver quite consistent with a diagnosis of portal cirrhosis. Not only the biochemical pattern of the latter disease but even the more or less complete clinical picture may be noted (table 3). Stricture produces one of the two types of obstructive jaundice in which positive results of flocculation tests are not uncommon; the other is produced by a neglected stone in the common duct. The physical findings in some cases of stricture are remarkably similar to those seen in portal cirrhosis; "spiders," "liver palms," esophageal varices, ascites and edema were noted in the cases which appear in table 3. In case 3 a specimen removed from the liver at operation and submitted to a noted pathologist was diagnosed as "alcoholic cirrhosis."

TABLE 3

Laboratory test	Case 1	Case 2	Case 2	Case 3
		Preop.	P. O.	
Total bilirubin, mg. per 100 cc.	14	5.5	11.3	2.5
Serum albumin, gm. per 100 cc.	2.5	2.9	3.3	3.4
Thymol turbidity, units	5	2	4	12
Prothrombin time, sec.	25	45	28	21
Platelets, 10^3 per cu. mm.	65	140	250	57
Cholesterol, mg. per 100 cc.	123		147	
Cholesterol esters, mg. per 100 cc.	32		32	
Comment	Ascites and edema	Complete suppression of biliary flow; biliary cirrhosis		Esophageal varices "spiders"

These late cases, in many of which the condition is beyond the reach of surgical repair, are by no means representative of the large group of strictures seen at surgical clinics, but rather represent examples of the results of long-standing interference with biliary flow and of ascending biliary infection. In the main, the last-mentioned pathologic processes are tolerated better than would be expected, as shown by the 2.3 per cent surgical mortality reported by Walters and Phillips for the eighty-six reparative procedures described in their 1940 to 1947 group of 67 cases.

The lessons to be drawn from these paragraphs are too obvious to require detailed discussion; stricture is a condition which is largely preventable, which leads to extremely serious consequence if treatment is delayed, and yet which may be amenable to surgical repair if promptly recognized and properly managed.

Summary

It is important that certain criteria for the diagnosis of neoplastic biliary obstruction be recognized in patients under consideration for the performance of Whipple operations, since they permit the surgeon to proceed with confidence even in the presence of equivocal surgical findings.

Changes in the serum colloids, as measured by procedures involving the production of flocculent precipitates or turbidity in various colloidal and inorganic reagents, are of great value in the recognition of primary hepatic disease and as screening tests in clinical practice.

Thrombopenia with or without associated abnormal capillary fragility is commonly found in primary liver disease while it is decidedly uncommon in obstructive jaundice.

Aspiration (needle) biopsy has a peculiar but limited field of usefulness in the diagnosis of certain diseases associated with hepatomegaly and jaundice; it is also an important research tool in the study of hepatic disease.

The increasing incidence of stricture of the common bile duct is a challenge to the surgical profession; in late or neglected cases of stricture the clinical picture, the biochemical features, and even the pathologic findings of portal cirrhosis may develop.

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Diagnosis of Some of the Common Motor Anomalies of the Eye*

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FIRST, in making a diagnosis of motor anomalies we must develop a system of examining our patient. This includes: 1) measurement of visual acuity, 2) measurement of accommodation, 3) measurement of convergence, 4) determining whether or not there is a deviation or tendency of the eyes when they fix an object at a given distance, 5) an accurate refraction, 6) monocular excursion, 7) binocular excursions, 8) evaluation of the effect correcting the refractive error will have on the motor anomaly, 9) determining the fixing eye, 10) some evaluation of binocular vision and the strength of fusion if fusion is present. Visual acuity is taken in young children using the E chart. Vision of 20/20 is not expected. This is probably due to lack of attention and not to pathology. In the very young accommodation can not be measured, Convergence is easily measured by bringing a light toward the patient's nose and noting the distance from the base of the nose where the eye or eyes turn out.

The simplest method of objectively spotting atropia, or manifest deviation of the eyes, is the Hirschburg test. The examiner shines a light in the patient's eyes; if one eye deviates the light reflex will be off center in the deviating eye—to the outside in esotropia, to the inside in exotropia. The Hirschburg test is especially useful in examining very young or uncoöperative children.

The cover test is perhaps the most useful of all our tests. If a patient fixes a particular object he does so with his master, or dominant, eye calling for the amount of nervous stimulation it wants. This stimulation also goes to the non-dominant eye. If fusion is present in a given person, diplopia will be experienced if this individual does not keep his two maculae in line with a fixed object. The desire to avoid diplopia is very strong. Should a cover be held over one eye while a person fixes an object, this cover of course stops the occluded eye from seeing the fixed object. Fusion is broken up; there is no fight to avoid diplopia since diplopia is impossible, with only one eye seeing. The non-fixing eye behind the cover now responds to its innervation, or lack of innervation, without the restraining action of fusion, so if there is a deviation or a tendency to deviate, the eye will do so behind the cover.

Now, should the cover be switched to the opposite eye, the uncovered eye attempts to fix, so if it had been deviated behind the cover a movement is necessary to bring the macula in line with the object to be fixed. The excursion of this movement depends upon the amount of deviation. As the cover is moved from one eye to the other, if we can put a prism in front of the covered eye of such strength that when the cover is moved the fixed object will fall on the macula of the uncovered eye, then there will be no movement of the uncovered eye. We know the amount in degrees that a given prism bends light, thus if we stop an eye from moving when the cover is passed from one eye to the other using prisms, we measure in degrees the amount the eye deviated when it was covered.

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In using the cover test it is easier if one watches one eye at the time and does not switch observation every time the cover is changed.

The Maddox rod breaks up fusion by fooling the brain into thinking that since it sees a line with one eye and a light with the other, there is no reason to avoid diplopia since there are two different objects. If a deviation or a tendency to deviate exists, the eye behind the Maddox rod will deviate. When it does the line is projected according to the laws of false projection. Prisms are then placed in front of the deviating eye until the line goes through the list. The maculae are then in line in that particular plane. The strength of the prism tells us the amount of deviation of the eye behind the Maddox rod.

There are other tests for measuring the amount of deviation, but if these three are understood, this is enough.

No explanation of refraction is necessary. We do not routinely use atropine in children. Homatropime and 1 per cent paradrine is sufficient to secure a working cycloplegia.

With one eye covered, the opposite eye is carried into the field of action of each extraocular muscle. Any tremor of fixation is noted. Amblyopic eyes show a marked inability to fix, even in the primary position. This of course will carry over into any position. In a very young child we can thus objectively diagnose amblyopia. If the patient can not fix because of poor macular vision, the cover test is of no value in measuring the angle of deviation. We will here depend on the Hirschburg test.

Should there be a paresis of an individual extraocular muscle, the field of rotation will be restricted in that muscle's line of maximum pull. The eye may show irregular nystagmus or there may be a manifest lag. If a muscle is fibrotic as in strabismus fixus, or in retraction syndrome, the eye will be bound down by the non-yielding muscle so that the antagonist to the fibrotic muscle would appear paretic. Time does not permit a discussion of strabismus fixus or retraction syndrome. If strabismus fixus is suspected, the eye should be rotated with fixation forceps at the time of surgery to determine whether or not it is anchored.

Testing binocular excursions should always be done. The binocular movements of the eye behave as if there are at least eight supranuclear centers: 1) a convergence center, and 2) a divergence center for the control of the disjunctive movements of turning eyes in and moving the visual axes from a converged position back to parallel.

Six other centers probably control: 1) eyes right, 2) eyes left, 3) eyes up and left, 4) eyes up and right, 5) eyes down and left, and 6) eyes down and right.

The two internal rectal muscles turn the eyes in. The two external rectal muscles turn the eyes out. If there is an overstimulation to convergence the eyes turn in too much. Here there is an esotropia for near as measured with the cover test or the Maddox rod. When the esotropia is measured to the right and to the left no increase in the deviation is apparent. The deviation is considerably less for distance. The near point of convergence is good. This patient turns his eyes in too much. There is no paresis of an individual muscle because the error does not increase when measured to the right or left. Clinically it seems that there is an overaction of convergence so we will label this type of error convergence excess.

If the convergence center is underacting, we will find the following: 1) An exotropia for near that does not increase when the patient looks to the right or to the left; 2) the exotropia is much less for distance; 3) the near point of convergence is remote. This patient does not converge his eyes enough so we will label this condition convergence insufficiency.

If, on examination, we find an esotropia for distance, much less esotropia for near, no increase in esotropia to the right or left, and a near point of convergence that is not excessive, it is apparent that this patient does not properly use his divergence powers when he looks at a distance. His eyes do not turn out to parallel. This we will call divergence insufficiency.

An exotropia for distance, no increase of exotropia right or left, much less exotropia for near, and a normal near point of convergence indicates that the eyes diverge too much when they look at a distance. This is a divergence excess.

Paresis of an individual muscle will be recognized because a greater deviation of the eyes becomes manifest when the patient turns his eyes into the field of action of the paretic muscle. For example, let us examine a case with paresis of the right external rectus muscle. When this patient looks to the right there will be a definite esotropia. As he looks to the left the esotropia becomes less and less. We measure with the cover test eyes front, eyes left and eyes right. There is an esotropia on looking eyes left, but much less front, and even less eyes right. This can not be due to an over or under action of convergence or divergence but must be either an underaction of the right external rectus or an overaction of the left internal rectus. Overaction, except that due to secondary contracture or secondary deviation, is rare. The most probable diagnosis would be paresis of the right external rectus.

Herring's law, as restated by Scobee reads, "The fixing eye always determines the innervations which it and the non-fixing eye receive. Any innervation arising in the central nervous system and destined for one eye will ultimately arrive in both eyes in exactly the same amounts."

Sherrington's law states that when one extraocular muscle receives an innervation to contract, its direct antagonist will invariably receive a simultaneous innervation to relax.

Applying our knowledge of Herring's laws we can make use of the screen comitance test for checking binocular movements.

Again we will use the example of the patient with right external rectus paresis. If we ask him to look to the right and cover the left eye, the paretic external rectus demands more than normal innervations. This it gets. No fusion is present because of the cover. The left internal rectus receives the overstimulation that is going to the right external rectus so there is an overshoot of the left eye in the field of action of the internal rectus. This is a secondary deviation or overshoot of the non-paretic eye.

If the cover is placed over the right, or paretic, eye, the left eye fixes. On looking to the right a normal impulse reaches the paretic eye behind the cover. This is not enough to pull the paretic eye over, so it lags. This is a primary deviation. The primary deviation is not as great as the secondary deviation, but in both cases there is an esotropia when the patient looks to the right.

If we ask the patient to look to the left with the cover over the right, or paretic, eye, the non-paretic eye is fixing and demands a normal impulse to look left. This impulse reaches the right internal rectus behind the cover. The antagonist of the internal rectus is paretic and deficient in tone so the internal rectus on the right will pull the eye too far to the left. This is a secondary contracture of the non-paretic right internal rectus. It will cause an esotropia when the patient looks to the left.

If the cover is now placed over the left non-paretic eye and the right eye is made to look to the left, it is working against a paretic antagonist so not so much energy is necessary to turn the eye to the left. This lowered energy is not enough to turn the normal left eye as far to the left as the right eye is fixed so there will be an inhibitional lag of the left eye behind the cover. In both cases there will be an esotropia when the eyes look to the left. Secondary contracture and inhibitional lag are not pronounced in recent paresis. Older cases work more and more into these two conditions.

If a patient has a congenital or acquired paretic muscle the manifest deviation will depend on the fixing eye.

The same condition holds for the yolk muscles that elevate and lower the eyes. In looking up and to the right, for instance, the two yolk elevators would be the right superior rectus and the left inferior oblique. In a paresis of one or the other the deviation will depend upon the fixing eye. If, for example, the right superior rectus is paretic and it is the fixing eye, the deviation will be an overshoot of the left inferior oblique. The patient will have a left hypertropia when he looks up and to the right.

The superior oblique and the inferior rectus depress the eye. In addition, the superior oblique and superior rectus are intorters. The superior oblique is an accessory abductor. The superior rectus is an accessory adductor. Elevation is the easiest action to see overacting or underacting in these two muscles, so for diagnostic purposes it is easier to use elevation as the diagnostic action. This is done by measuring the hypertropia with prisms in the field of maximum elevation. We then follow with monocular excursions and binocular excursions, applying Herring's and Sherrington's laws in the latter procedure by use of the screen comitance test. The same is true for the two depressors of the eye.

To find the fixing eye one asks the patient to fix a given object. The cover is placed over say the right eye. If the right eye deviates behind the cover, and left eye is fixing the object. Now, if the cover is removed and neither eye moves, the left eye is still fixing the object. If both eyes move when the right eye is uncovered the right eye must have taken over fixation when given the opportunity. The cover is now placed over the left eye. If neither eye moves the right eye must be fixing.

After refraction with homatropine or atropine, the full correction is put on the patient and the deviation is measured with the cover test again for distance and near. Here we are especially interested in the lateral deviation for straight ahead, distance and near. When near is measured, a plus 2.00 add is put in the frame. From this procedure we have determined the mechanical and the accomodation elements of the squint. Surgery is aimed at the mechanical element only.

We now wish to know something about fusion. The simplest test is the red glass test. One holds a red glass in front of the patient's right eye and asks him to look at black letters on a white background at 20 feet distance. If he sees a pink background to the letters, the glass is switched to the left eye. Should the background again look pink this indicates second degree fusion. When the red glass is over the right eye should the background look white, this means suppression of the right eye as likewise does a red background. If the background changes from red to white and black, the patient is alternating.

Nothing has been said about phorias. Time does not permit. Needless to say, tropias are manifest deviations. They are latent deviations that become manifest only when fusion is broken up.

The same principle of diagnosis holds true for both. We will not make a diagnosis of esotropia or exotropia, but we will try to determine if (1) the eyes turn in too much or do not turn out enough, (2) they turn out too much or do not turn in enough, (3) is there a paresis of an individual muscle?, (4) if paresis of an individual muscle is present, is the deformity an underaction of the paretic muscle or an overaction of its yolk or antagonist, or an underaction of its yolk (by diagnosing the deformities we have a later starting point in therapy), and (5) what effect does correcting an existing refractive error have on the deformity?

Medical Treatment of Squint

The medical treatment of squint can be divided into three catagories: (1) correction of refractive errors, (2) occlusion of the good eye to build up vision in the opposite amblyopic eye, and (3) orthoptic exercise.

Correction of Refractive Errors—It is our policy in esotropia to prescribe the full homatropine or atropine retinoscopy findings. We do not think it is necessary to use atropine at home in all these cases, and in fully 90 per cent of our work we feel we get enough cycloplegia with 5 per cent homatropine and 1 per cent neosynephrine instilled 2 or 3 times at ten-minute intervals. If we can be sure of the cylinder in our retinoscopic findings, we include it in the prescription. If we can not be sure of the cylinder we prescribe the spherical equivalent. If a squint is accommodative, improvement is noticed immediately following the use of glasses. If no improvement is noted within 3 or 4 weeks, it is our opinion that none will occur, so changing glasses to a stronger or weaker prescription is not going to do any good.

The question of prescribing bifocal glasses for children comes up, especially where there is more esotropia for near than for distance. Theoretically this is a good thing. Older people wear bifocals and use the bifocal segment of their glasses. A young child has a strong accommodation and certainly does not have to look through the bifocal segment to see. So, I think prescribing bifocals does not do any good because the child does not pay any attention to the bifocal segment.

Occlusion—If a patient has an amblyopic eye the question arises as to whether or not occlusion should be tried and should it be tried before or after surgery. There are some cases of vertical anomalies where it is advantageous for the patient to continue fixing with one or the other eye. In these cases, if occlusion is tried, the patient may swap fixation and make the correction of the squint more difficult. In the ordinary run-of-the-mill cases of lateral anomalies, it is our opinion that it does not make much difference whether occlusion is tried before or after surgery. We have not had very good results from the use of occlusion. Occlusion should be carried on for a period of 3 weeks to a month. The method of occlusion, whether by atropinizing or patching the good eye, is up to the individual ophthalmologist. If no improvement is noted within the 3 or 4 weeks, none will occur, so further occlusion is useless.

Orthoptic Exercises — Orthoptic exercises have been used by us mainly postoperatively. When a child is young enough to develop fusion he is too immature to coöperate with extensive exercises, so if he has a frank deviation we think that surgery is a better approach. Once his two visual axes are brought into line, many of these children will go right ahead and develop fusion without any further manipulations. If we wait until a child is old enough to coöperate with an orthoptic technician, there is less chance of developing fusion.

We have had fair success, postoperatively, in the use of orthoptics to develop fusion. We have not had any success in trying to train children with frank squint to straighten their eyes. It is very useful information to know whether or not a child can fuse before any surgery is attempted. This information can be derived from an orthoptic survey preoperatively provided the child is old enough to coöperate.

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The Problem of Cancer of the Breast*

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Since one out of every twenty-five women reaching adult life will develop a cancer of the breast, it is a problem which concerns everyone here tonight. It is generally stated that between 15,000 and 20,000 die annually from this one disease. In a recent survey, cancer of the breast was by far the most frequent site for malignancy in either sex.

Etiology—Despite continuous experimental and clinical observation, the etiology of breast malignancy remains obscure.

Experimental Etiological Factors—Experimental investigations on mice have revealed many noteworthy findings. For convenience of discussion, these may be grouped under three headings:

1. Heredity: The work of Slye and others has demonstrated that hereditary factors influenced the formation of mammary carcinoma in mice, for those in whose immediate ancestry malignancy occurred were distinctly more likely to develop the disease themselves. This hereditary influence is not as pronounced in humans, but there is an occasional marked familiar tendency to carcinoma of the breast. Sampson Handley reports a family of five sisters, in whom three had carcinoma of both breasts, one carcinoma following cystic mastitis, and the other cystic mastitis.

2. Hormones: An estrogenic hormonal influence in the development of mammary cancer has been repeatedly demonstrated in mice, rats and rabbits. The incidence of mammary tumors in susceptible mice can be radically reduced by oophorectomy. Conversely, malignancy can be produced in male mice of vulnerable strains by the injection of estrogens. Progesterone is reported to decrease the incidence of mammary tumors in mice.

This estrogenic hormonal influence, predisposing to the development of mammary carcinoma, explains the increased incidence of breast cancer in women with delayed menopause, the low percentage (1 per cent) of breast carcinoma in males, and the infrequency of mammary malignancy in women who have been surgically castrated. There is no evidence in the literature which proves that the use of estrogenic substances, even when used in heavy dosage for prolonged periods of time, has been instrumental in producing mammary carcinoma. However, in view of the experimental evidence, the possible danger can not be ignored.

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3. **Milk Factor of Bittner**: Allowing mice of non-cancer strains to be nursed by high cancer strains markedly increases the development of malignancy in these mice; this seems to be due to some obscure substance present in the milk. Conversely, the transfer of mice of high mammary-tumor strains to foster mothers of low-mammary-tumor strains markedly reduced the occurrence of neoplasms.

Clinical Etiological Factors

1. **Age**: Age is a predisposing factor. The highest incidence is in the decade from forty of forty-nine; 74 per cent of mammary carcinomata occur in women past the age of forty. There is no true "cancer age," however, under no circumstances, should breast malignancy be excluded on the basis of age alone. We cannot lose sight of the fact that 2 per cent of breast malignancies occur in women under thirty.

2. **Marriage**: Cancer of the breast is more common in unmarried and nulliparous women than in women who have borne children. Low fertility is associated with a higher incidence of mammary carcinoma.

3. **Previous Benign Lesions**: Cancer of the breast seems to be more common in women who have had previous benign disease of the breast, i. e., chronic cystic mastitis or fibroadenoma. Shields Warren reports that women with chronic cystitic mastitis and related lesions are four to five times more likely to develop mammary cancer than those free of benign breast disease. The danger is more marked in younger women, for in the age group of thirty to forty-nine, women with chronic cystic mastitis are 11.7 times more likely to develop breast cancer. This risk is not sufficiently great to warrant simple mastectomy as a routine procedure in chronic mastitis. It is imperative that these patients be carefully and periodically examined, and surgery advised for all suspicious lesions.

In his follow-up, Warren reports 513 patients with chronic cystic mastitis who developed twenty-five mammary carcinomata; an incidence of 4.8 per cent; twenty-one with intraductal papillomata, in which three cancers developed, an incidence of 14 per cent; and seventy fibroadenomata in whom two developed breast cancer, an incidence of 2.8 per cent. Geshickter reports a follow-up incidence of mammary carcinoma of 6 per cent in previously excised intracystic papillomas, 3 per cent in adenosis (chronic cystic mastitis), and 1 per cent in fibroadenomata. There is no question that a history of, or the presence of, benign breast tumors demands constant periodic examination on our part to exclude subsequent development of malignancy.

Pathology

Mammary carcinomata are of two fundamental pathologic types:

1. Adenocarcinomata, arising from lobular structures, comprise 90 per cent of cancers of the breast. Included in this group are scirrhous carcinoma, carcinoma simplex, comedo carcinoma, and gelatinous carcinoma.

2. Stratified epithelial cancers, derived from the nipple and larger ducts, and including medullary carcinoma, Paget's disease, and duct cancer.

Regardless of the pathologic type of mammary malignancy, growth and spread take place by: 1) intramammary extension, 2) lymphatic, and 3) blood stream dissemination. By means of the lymphatic vessels, the efferents of which are located in the muscular aponeuroses, the regional lymph nodes become involved. Thus the axillary, supraclavicular, and mediastinal nodes are frequent sites of metastatic involvement. Adjacent viscera-lungs, pleura, and liver are frequently affected.

The importance of the vertebral veins for skeletal and cerebral metastasis has been recently emphasized by Batson. He has demonstrated by injection of material into the intercostal veins a spread to the vertebral venous plexus; this explains the frequent skeletal metastases: spine, pelvis, skull, ribs, and shoulder girdle.

Diagnosis

Careful examination of the breasts is an essential part of any physical survey. The breasts must be studied as a separate step, and not casually palpated during examination of the heart. The following routine has proved useful in detecting early changes in the breasts:

Have the patient sit on the edge of the

examining table stripped to the waist and in a good light. The supraclavicular areas should then be compared in contour and carefully palpated. The axillae are next examined with the pectoral muscles relaxed; this is achieved by supporting the patient's arm. The next step is critical inspection and comparison of the breasts; first, with the arms relaxed at the sides, and then with the arms raised above the head. Next, the breasts are observed as the patient tightens the pectoral muscles by exerting pressure with the palms of the hands on the hips. Such maneuvers bring out retraction signs: lines and dimples over suspicious areas and deviation of the axis in which the nipple points. Another procedure that is useful in revealing retraction of the skin is for the examiner to lift the breast upward with his hand.

When inspection is completed, palpation should be done by going over the entire breast with the tips of the fingers. The subareolar area is best palpated with the patient sitting up. For other parts of the breast, the dorsal position is much better for palpation. Transillumination is only occasionally of value. Roentgen examination of the breasts is hardly worth the effort and expense.

After the aforementioned clinical examination of the breasts has been done, one can be reasonably sure whether or not a mass is present. Unless the patient is in otherwise critical condition, excision biopsy with careful microscopic study is essential in all cases. Even the most astute clinicians have an error of 10 per cent in distinguishing between benign and malignant lesions. Thus, the only safe procedure is to biopsy all breast masses.

The problem of bleeding nipple it at times most trying. It is a cause of alarm and concern to both patient and physician, especially when there is no associated palpable tumor. Adair, in studying 108 cases of sanguineous discharge from the nipple, found fifty-seven associated with benign and fifty-one associated with malignant neoplasms. Since bleeding from the nipple occurs in 5-9 per cent of mammary carcinomas, such discharge cannot be taken lightly.

The policy of surgical exploration of all cases with sanguinous nipple discharge (with or without palpable tumor) is a sound one. By careful examination, the major duct involved can be determined. At operation, insertion of a blunt needle into the involved duct as a landmark aids the surgeon in doing an adequate quadrant resection, which will include the involved ductal system. This procedure is cosmetically and psychically nonobjectionable, yet is frequently curative. Sufficient tissue is obtained for an accurate pathologic study, which determines the course of further therapy: usually observation at periodic intervals, but occasionally, simple or radical mastectomy, according to the pathologist's findings.

Any erosion of the nipple or areola which persists three weeks should be biopsied. The serious potential of these ulcerations is still not appreciated, and valuable time is lost thereby. I have seen three cases of Paget's disease in the last year. In each, despite medical consultation, more than eight months had elapsed before pathologic study was advised.

Treatment

For convenience of discussion, this will be divided into two parts:

1. **Treatment of Primary Operable Breast Cancer.** Radical mastectomy is without question the treatment of choice of this group, which includes malignancies limited to the breast alone and malignancies limited to the breast and regional axillary lymph nodes. Approximately three in every four patients with cancer limited to the breast can obtain a five year clinical cure by proper radical mastectomy. Such a high survival rate is reported by many surgeons throughout this country and Europe: Harrington of Mayo Clinic reports 71.4 per cent five-year cures in 1.086 cases; Lane-Claypool of England in a collected series of varied British surgeons reports 71.3 per cent five-year cures. These are essentially the cure rates reported by Halstead over forty years ago.

The results from radical surgery in cases with microscopically proved axillary metastases are not nearly so encouraging as those without axillary metastases, for there is only a 25-30 per cent five-year clinical cure in most clinics. No other form of therapy achieves this many cures, however. Thus, excisional surgery is, without question, indicated in the face of axillary metastases. More recently, Adair of Memorial Hospital and Marshall of the Lahey Clinic report five-year cure rates of 42 per cent and 50 per cent, respectively.

Many clinicians advise postoperative irradiation in the majority of cases treated by radical mastectomy. This is especially true with proven axillary metastases, and the higher grades of malignancy. There is some evidence to indicate that a 2-5 per cent increase in five-year cures can be obtained by supplementing radical surgery with postoperative irradiation. Preoperative irradiation has few champions at present; rarely, it can be used to convert an inoperable to an operable lesion. For the most part, the delay necessitated by preoperative irradiation and the faulty wound healing resulting from such treatment far outweighs any useful effects obtained from it.

2. **Treatment of Inoperable Breast Carcinoma.** This group includes those cases in which the disease has spread beyond the confines of the breast and its adjacent axilla. In such cases there is a spread to the opposite breast, opposite axilla, or cervical lymph nodes; visceral and skeletal metastases; etc. Radical mastectomy has no place in the treatment of this group; excisional surgery is powerless to cope with far advanced or generalized forms of mammary carcinoma.

Radiation therapy must be relied upon to alleviate widespread or inoperable carcinomata, which comprise approximately one-half of all mammary cancers observed today. Marked palliation may be obtained by radium or x-ray therapy of recurrent breast cancer; spectacular results are often obtained in the treatment of skeletal metastases. Palliative local excisions or simple mastectomies are sometimes necessary to relieve the patient of malodorous, ulcerating, bulky and painful tumors. It cannot be too strongly emphasized that excisional surgery is of minor or subordinate importance in the treatment of this group, just as irradiation is of minor importance in the first group. To apply either form of therapy indiscriminately and over-enthusiastically is to sacrifice lives and increase morbidity.

Since the Coutard principle of fractional irradiation was adopted about twelve years ago, marked improvement in radiation results with a lessened morbidity has resulted. Such complication as intractable radiation neuritis, pulmonary pneumonitis and fibrosis, skin necrosis and destruction of underlying bone and cartilage have greatly decreased. Rather dramatic arrests and a few cures have been obtained by irradiation in widespread malignancy; this is particularly true of skeletal metastases, which occasionally actually re-ossify under treatment.

Unfortunately, the favorable results obtained by radiation in widespread carcinoma have led certain roentgen enthusiasts to exclude radical mastectomy and substitute irradiation in all types of breast carcinoma, as has occurred for cancers of the cervix, tongue, and pharynx. In the literature of the past ten years there are numerous opinions advising abandonment of radical surgery and substitution of irradiation therapy. This has led to creation of false hopes, and has resulted in the preventable deaths of many with early breast cancer. Livingston and Pack discuss this important problem at length and present irrefutable evidence to support the following statements:

"The treatment of primary operable cancers by irradiation alone has proved a costly substitute for radical mastectomy. Factual data clearly disclose upon analysis that from ten to thirty fewer patients per hundred with early breast carcinoma survived at the end of five years when treated by irradiation alone than would have survived had they been treated by radical surgical extirpation or by radical mastectomy plus irradiation." The National Radium Trust and Radium Commission of Great Britain (1937) reported a 38 per cent five-year cure of patients with stage I breast cancer, i. e., malignancy limited to the breast. When compared with the 70+ per cent of five-year cures obtained by radical excisional surgery, one sees that thirty-two lives per hundred patients have been sacrificed to clinical experimentation and radiologic whimsy. There is no justification for treating a patient with early breast cancer exclusively with radium and/or roentgenrays unless the patient refuses surgery or has sufficient grave systemic diseases to contra-indicate radical surgery.

Technique of Radical Mastectomy

The basic principles of radical mastectomy which were independently set forth by Ralstead and Will Meyer in 1894 have remained unchanged. A radical **en bloc** excision of the entire breast, para-mammary fat, underlying pectoral muscles and axillary fibrofatty and lymphatic tissue remains the procedure of choice. There must be no compromise for meticulous, painstaking surgery: as much tissue as possible should be removed from the chest and axilla, without endangering the patient's life or interfering with the function of the arm. There is no justification for incomplete operations, which are all too frequently done. In such cases, the operator lulls himself into sublimity by believing postoperative irradiation will care for the incompleteness of his surgery. Such a view is inexcusable, for its practice deprives many of their chances for a cure. There is no place for "hurry-up surgery" in properly executed radical mastectomy. To effect a complete **en bloc** radical mastectomy properly will take from two to four hours: quicker operations are usually compromises. Haagensen and Stout furnish statistical proof of the direct relationship of the length of operation time with five year cures—i. e., the more careful the surgery, the better the chance of survival.

To withstand the extensive and prolonged surgical procedure, careful preoperative preparation is essential. Particular attention must be paid to restoring normal blood volume and circulating hemoglobin. A minimum of 1000 cc. of compatible blood should be available at the time of operation to prevent shock. Certainly, it is infinitely easier and safer to safeguard against shock, rather than institute treatment after its development.

Careful administration of the anesthetic is essential: maintenance of relatively superficial plane is much less shocking and thereby less hazardous. Induction with sodium pentothal, cyclopropane, or ethylene with maintenance by ether is one of the safest and most satisfactory modes of anesthesia.

Wide skin excision is important. Frequently, the skin of the entire breast should be sacrificed: there should be at least five cms. between the edge of the tumor and the skin incision. There should be no thought of wound closure at the time of skin excision: larger defects can be easily covered at the completion of the operation with a Thierch or splint-thickness graft. It is essential not to carry the upper end of the skin incision into the axilla, as the inevitable result is restricted of arm motion due to a bank of scar tissue.

Wide dissection of skin flaps medially to the mid-sternal line, inferiorly to a line midway between the xyphoid and umbilicus, laterally to the anterior border of the latissimus dorsi and superiorly to the clavicle, is next done. The plane of dissection should be just beneath the skin to insure removal of all breast tissue and para-mammary fat with enclosed lymphatics. The axilla is exposed by severing the humeral attachment and separating the clavicular from the sternal portion of the pectoralis major. The pectoralis minor is then sectioned; it is frequently possible to save a few centimeters of this muscle near its coracoid insertion to act as a buffer to the exposed axillary contents following axillary dissection. An **en bloc** dissection and excision of all axillary fibro-fatty tissue with enclosed lymphatics is then effected. Care is taken to preserve only the axillary vessels and brachial plexus. The long thoracic nerve is usually salvaged; it is not necessary to save the subscapular nerve, since no postoperative inpairment can be demonstrated following its section. At the completion of the axillary dissection, the pectorals are completely removed from the chest wall, care being taken to ligate all perforating branches of the internal mammary and intercostal vessels. As the pectorals are excised, the fascia covering the upper fourth of the rectus, the serratus anticus, and subscapularis is also removed. Careful hemostasis pays dividends in postoperative healing; usually, drainage is used. If closure of the wound without tension is not feasible, immediate skin grafting is indicated.

A pressure dressing utilizing mechanic's waste for compression is then applied. Such a dressing aids healing materially by obliterating dead space, providing immobilization and preventing edema. The patients are ambulated early, pulmonary exercises are encouraged to avoid hypostatic pneumonia. Early movement of the arm is encouraged.

In proper hands and with painstaking care, the mortality from such an extensive radical mastectomy as outlined above should not exceed 1.5 or 2 per cent. Certainly, it is the only logical way of dealing with such a formidable opponent as mammary carcinoma.

Castration

The question of surgical or radiologic castration in menstruating women following radical mastectomy for carcinoma represents one of our largest and most controversial clinical problems. This debate is by no means new, having been discussed before the German Surgical Congress in the late 80's. The work of Huggins in prostatic cancer has again revived interest in the subject of castrations in mammary cancer. Such a procedure should not be undertaken lightly, but would be worth its ill effects if it would save lives. Unfortunately, there is no consistency of benefits to patients. The most spectacular benefits are in those who castrate themselves with ovarian metastases.

Adair of Memorial Hospital in following 342 castrations found 15 per cent to be definitely improved and 19 per cent to be questionably aided. He found no significant difference between surgical and radiologic castration. He advised x-ray castration in any young women with axillary involvement, distant metastases, or local recurrence. It is the concensus of most operators that castration should be reserved for premenopausal patients with advanced, recurrent, or metastatic cancer.

There is some evidence that surgical castration of males is of material benefit in breast cancer with widespread involvement. Of particular interest is a recent report by Treves **et al** citing the case of a seventy-two-year-old man with widespread metastases to the bone who has obtained complete relief of pain and marked regression of local and metastatic lesions for a period of 28 months following castration.

In view of the experimental work suggesting the importance of the estrogens in the genesis of breast cancer, it was natural that the androgens be tried in the treatment of the disease. Significant alterations in advanced breast carcinoma can occasionally be effected with testosterone. The most striking effects are on the osseous metastasis and general condition of the patient. Pain may be dramatically relieved. Actual recalcification of osseous metastases has been reported. Surprisingly, the administration of estrogens may be followed by appreciable regression of primary and metastatic tumor nodules, especially those in the soft tissues. This improvement with estrogens is, in general, confined to patients over sixty years of age. In younger patients, the administration of estrogens may actually accelerate the disease. Although the final answer is not yet known, it seems that the administration of sex hormones to patients with advanced mammary carcinoma may offer appreciable palliation.

Factors Affecting Prognosis

Axillary Involvement: By all odds, the presence or absence of axillary nodal metastasis is the most important prognostic factor. The clinical cure rate is three times as high in those in whom the disease is limited to the breast as in those in whom it has extended to the axillary lymph nodes (70 per cent as compared to 25-30 per cent). The frequency of local recurrence is also related to the presence of axillary metastasis.

Age of Patient: Neoplastic disease in general is prone to be more malignant in young persons. Younger patients are more likely to have axillary metastasis and hence have a poorer prognosis.

Pregnancy and Lactation: In view of the great hormonal and growth stimulus which the breast receives during pregnancy and active metabolism during lactation, it is natural that carcinoma developing during this time is extremely malignant. Haagensen and Stout cite twenty such cases in which radical mastectomy was carried out with no permanent cures, but a five-year survival rate of 15 per cent. In a series of ninety-nine patients, Harring had a five-year survival rate of 13.2 per cent. Haagensen and Stout lists such cases as "categorically inoperable." In spite of the unfavorable results obtained in this group, I do not believe they should be denied their only possible chance of cure.

Although there is not universal accord, most authorities advise against subsequent pregnancy in women successfully treated by radical mastectomy.

Local Signs: Local signs such as redness, edema, and ulceration of the skin and fixation of the tumor to the chest wall do not in themselves contra-indicate radical surgery, but are indicative of a poorer prognosis.

Conclusion

It certainly behooves us to forego our pessimistic attitude about breast cancer and to redouble our efforts in instituting early, correct, curative therapy. Unfortunately, the conception of cancer as a totally incurable disease is widely accepted by many people and not a few physicians.

There must be patient and physician education. We should train our female patients to examine their breasts once a month, between periods. More emphasis should be placed on making the individual responsible for her own health. Every patient should be told to consult a physician for any breast abnormality—lump, deformity, inversion of the nipple, discharge, etc. Every female patient over thirty-five should, of course, have an examination of the breasts and pelvic organs every six months. We, as physicians, must act promptly. It must be remembered that there are few symptoms associated with early breast cancer other than the incidental finding of a mass. The infrequency of pain as the presenting symptom of breast cancer is well known. All breast nodules, lumps, or masses should be excised and submitted to a competent pathologist for microscopic diagnosis. This cannot be too strongly emphasized: it is frequently clinically impossible to differentiate an early cancer from a cyst or benign tumor. Certainly, it is better to explore many, many breasts than to let one early cancer escape us.

Once the diagnosis is established, it is all important to institute correct therapy. Radical excisional surgery, meticulously executed has been for the past fifty years, and remains, the treatment **par excellence** in breast cancer confined to the breast and adjacent axillary lymph nodes. If the patient will accept surgery and is physically able to stand the procedure, there is no justification whatsoever for treating these primary operable cases by a substitute and less efficient means. Conversely, it is futile to apply radical mastectomy to cases in which malignancy has spread beyond the confines of the breast and its adjacent axilla. Thus, the following should not be subjected to radical surgery:

1. When the carcinoma is of the inflammatory type.
2. When distant metastases are demonstrable. Routine chest films and careful examination of the skeletal system are pre-requisites to radical surgery.
3. When proved supraclavicular metastases are present.
4. When there is spread to the opposite breast or axilla.
5. When there is definite fixation of axillary metastatic lymph nodes, which is usually associated with edema of the arm.

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Mesenteric Thrombosis, Massive Small Bowel Resection With Recovery

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Because the diagnosis is infrequently made before exploration, and because of the very high mortality of this disease, any case of mesenteric thrombosis which is treated surgically and recovers, deserves reporting. During the past four years, we have encountered two cases of mesenteric thrombosis. Both recovered uneventfully following resection with primary restoration of the continuity of the bowel. One of these cases[1] has previously been reported. One case was that of a venous mesenteric thrombosis, and the other arterial mesenteric occlusion. In this report, no attempt will be made to review the literature.

The etiology of this disease is not fully known but the following factors are highly significant and thought to be contributory: a) debilitating and degenerative diseases, b) inflammatory lesions of the abdomen, c) neoplastic intra-abdominal disease, d) mechanical factors, and e) blood dyscrasias.

The largest percentage of cases are seen in individuals past fifty years of age. Berger and Blondis[2] are of the opinion that advanced age, arteriosclerosis, auricular fibrillation, left ventricular failure and sudden abdominal pain may be pathognomonic of acute mesenteric thrombosis.

Unfortunately the signs and symptoms of this disease do not differ radically from those of other acute abdominal catastrophes. The disease must be constantly kept in mind when one is confronted with an acute abdomen in a person past fifty years of age. In our experience, the arterial obstruction produces more severe pain than the venous type of occlusion. Surgical intervention should be prompt in either type, but in arterial obstruction there is an even greater need for early diagnosis and prompt treatment.

Case Report

Mr. D.H.B., age 59, was admitted to the East End Memorial Hospital 8-15-47. He was in severe pain upon arrival at the hospital and was unable to give a clear account of his illness because of his severe pain. His wife gave the following story: Twenty hours previously he began having severe cramp-like abdominal pains. The pains were described as the worst he had ever experienced and the location was about the umbilicus. He was seen by his physician who administered opiates but with only a small measure of relief. All evening long he suffered, requiring morphine every three to four hours. There was no nausea, diarrhea or blood stools.

His physician called us before sending him in, stating that he had been unable to relieve his pain. He stated that he had treated him in the past year for upper abdominal distress, and that on occasions he had noted an irregular heart rate on examination.

When we first saw the patient the outstanding picture was severe, agonizing pain. Only after the administration of morphine intravenously was he relieved. The blood pressure was 125 systolic over 75 diastolic. The pulse rate was 130 beats per minute and irregular. Examination of the abdomen revealed diffuse tenderness throughout with marked rigidity. The leukocytes numbered 16,000 per cu.mm. with 94 per cent neutrophils on differential study. The urine contained a trace of albumin but was otherwise negative.

Because of his age, the history obtained from his referring physician regarding his heart, and because of the severe pain, a diagnosis of mesenteric thrombosis, arterial type was made. After preliminary preparation with glucose, saline, and plasma he was taken to the operating room for exploration.

Under combination pentothal and nitrous oxide-ether anesthesia the abdomen was opened through a mid-right rectus incision. There was approximately 300 cubic centimeters of bloody fluid free in the peritoneal cavity. Beginning just proximal to the mid jejunum was gangrenous bowel which was slightly over eight feet in length. The lines of demarcation between normal and gangrenous bowel were clear cut and sharply defined. There was extravasation of blood well into the mesentery of the gangrenous bowel. A resection of the gangrenous bowel was carried out with primary end to end anastomosis. At the conclusion of the operation 5 grams of sulfanilamide powder were placed in the abdominal cavity. The wound was closed in layers without drainage and without any further exploration. Interrupted cotton sutures were used for closure of the abdominal wall.

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Following surgery his condition was excellent. One pint of blood was given and intravenous fluids continued for three days. A Levin tube was placed in the stomach and constant suction maintained for forty-eight hours. Penicillin was administered in 100,000 unit doses every three hours for six doses, after which the dosage was reduced to 50,000 units every four hours for four days. His convalescence was uneventful and the wound healed by primary union. He was dismissed from the hospital ten days after admission.

Five months later he developed homologous serum jaundice which responded satisfactorily to medical measures. He has regained his weight and strength, his bowels are regular, and he is entirely well. The cardiac rhythm has been restored by the daily administration of small doses of digitalis. We considered the administration of anticoagulants during his postoperative recovery but it was not used, since he was allowed out of bed on the second postoperative day.

Summary

1. A case of mesenteric thrombosis with primary resection of eight feet of gangrenous small bowel, with recovery, is reported.

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Acute Infectious Lymphocytosis: A Case Report*

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Infectious lymphocytosis as a disease entity was first described by Smith[1] in 1941. The condition is characterized by its lack of symptoms or signs, and by hyperleukocytosis with absolute and relative lymphocytosis for a short period. It is differentiated clinically and hematologically from infectious mononucleosis, leukemia, and specific infections with associated lymphocytosis (such as pertussis).

Clinical signs and symptoms of acute infectious lymphocytosis may be so mild as to escape attention, and the condition is often picked up on a routine blood count. Symptoms when present may include low grade fever, irritability, vomiting, even abdominal pain with rigidity[2]. Physical findings are significantly absent. The lymphadenopathy and splenomegaly which often accompany leukemia and infectious mononucleosis are not found. The majority of cases occur in the first year of life.[3]

Blood studies show a marked leukocytosis (av. WBC 50,000-100,000) with an increase in normal lymphocytes (70 per cent-90 per cent). Meyer[3] has also noted a slight but persistent eosinophilia. The average duration of the lymphocytosis is five weeks. Other peripheral blood values (Hb., RBC, and platelet count) are normal. Bone marrow smears are normal except for an increase in small lymphocytes. The Paul-Bunnell test is negative. These laboratory findings are valuable in excluding leukemia and infectious mononucleosis.

Although no etiological agent has been isolated, the infectious nature of the disease is established by case series of contacts in families and institutions reported by Smith[4], Reyersbach and Lenert[5], and Finucane and Philips[5].

Case Report

C. D., an eleven-month-old colored male was admitted on June 29, 1948, with a history of vomiting which began suddenly on the day of admission. He was taken to a private physician who did a blood count and referred him to the hospital with a diagnosis of leukemia.

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The infant had had no previous illness, but a dietary history revealed an inadequate intake of iron and vitamins C and D. There was no history of contact with individuals who were known to be ill.

At the time of admission, temperature was 98.4°, weight 20 pounds. There was slight palor of skin and mucous membrances, and slight beading at the costochondral junctions with flaring of costal margins. Otherwise the physical examination was not remarkable. The liver and spleen were not palpable, and there was no lymphadenopathy, jaundice, or petechiae.

Laboratory tests furnished the following data: Hb. 9.5 gms., RBC 4.12 million, WBC 177,000, with segmented neutrophiles 13 per cent, stabs 1 per cent, mature lymphocytes 78 per cent, monocytes 4 per cent, eosinophiles 4 per cent, platelets 530,000. Sickling negative. Urinalysis, Kline, and Wassermann negative. Heterophile agglutination titer (Paul-Bunnell test) 1:14 (negative value).

A tibial bone marrow aspiration done on July 2, 1948, showed the predominant cells to be small mature lymphocytes. However, there was a good representation of the myeloid and erythroid cells found in normal marrow, the only unusual feature being the large number of lymphocytes distributed throughout the marrow without replacing normal elements.

The infant ran an entirely benign course. He remained afebrile and active and ate well.

Repeated blood examinations showed essentially the same value for hemoglobin, red cell count, and platelet count. However, the leukocyte count returned to normal as shown in the following tabulation of counts.

Date	WBC/cu. mm.	Neutrophiles Segmenters	Stabs	Lymphocytes	Monocytes	Eosinophiles
6-30-48	177,000	13	1	78	4	4
7-3-48	173,000	9	2	85	2	2
7-8-48	111,500	14		79	4	3
7-12-48	49,500	23		74	1	2
7-16-48	16,300	47	3	33	9	8
7-21-48	10,700	43	1	41	6	9

Comment

On the basis of the clinical and laboratory findings and the clinical course of this patient, we feel that it is a typical case of infectious lymphocytosis, the only unusual feature being the initial white blood count of 177,000, which is higher than any reported in the literature for this condition.

We believe that acute infectious lymphocytosis is a disease which should be familiar to all physicians not because of the frequency with which it will be encountered, but because of the ease of confusing it with leukemia because of the high white blood count which it produces.

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Fight Cancer!

Early Cancer Is Curable

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THERE'S no magic bullet to exterminate a disease that carries within itself the seeds of a creeping death—cancer—but there are methods of fighting this disease effectively along several fronts. These vantage points are education, service, or treatment, and research as to cause and cure.

Education about cancer and its hopeful aspects when early and adequate treatment is secured is now being carried on throughout the state. Cancer has three great allies contributing to the devastation and death wrought by this slayer: Fear, delay and ignorance. Education seeks to rout these allies and to substitute the knowledge that will save lives.

Fear whispers "Maybe that little growth you're worrying about is a cancer; if it is, you'll have to have an operation, and people would find out why—besides, you can't afford it. Keep mum, and don't tell your doctor." If that little growth really is a cancer and you keep silent about it, death will certainly ring down the curtain upon the final scene, for cancer is one disease, if just let alone, that kills 100 per cent of those attacked by it.

Delay advises the victim "Don't be in too big a hurry; you aren't suffering. Wait until you have some pain or are uncomforable. Maybe it isn't cancer—let things rock along awhile and maybe everything will clear up." The victim of delay winds up just where the victim of fear winds up.

Ignorance urges "Stay away from all that hifalutin stuff such as radium, x-ray or surgery. Just spread on a lot of good old Doctor Bunkum's salve and you'll be O.K.; look what it did for Henry Smith." The poor victim finally wakes up to the real situation, often after the disease has progressed to a stage beyond medical and surgical help. Death springs the trigger and the trap falls.

Since cancer is such an intensely personal disease and the individual himself is the first to notice any symptoms of it, education as to possible signs of cancer is of paramount importance. A continuous campaign in this work is being carried on in Mississippi through the efforts of the private physicians, the American Cancer Society, the state board of health and an army of volunteer workers. All these people have joined hands in one comprehensive, over-all program to save the lives of Mississippians who now have cancer and to bring essential information to potential victims. Today there is good news about cancer, in that newer, bolder techniques in surgery have made operations safer, the percentage of cures higher and the chances of complete recovery much greater when early diagnosis and adequate treatment is secured.

Another part of the program, service, is one that has reached into many a home in our state. Last year 1,286 cancer patients received treatment; in many cases transportation to and from hospitals and clinics was also provided. Since the beginning of the program nearly 3,000 patients have been given treatment—who can estimate the lives saved, the homes unbroken and the welfare of children promoted by this service?

Although we are not equipped to do any research work on a large scale in Mississippi, much is being done at present elsewhere. Scientists are seeking a point of attack that will enable them to devise means of destroying the cancer or gangster cell without doing harm to the normal cell. This research has at least opened the windows on a dark and stubborn subject, and there is increasing ground for hope that concentrated work will result in success in the not too distant future.

If we are to conquer cancer, this murderer of our people, there are several things to be emphasized throughout the length and breadth of our state:

1. Provide yourself with scientific information about cancer. This may be secured from your family physician or your local health department. Learn to recognize the danger signals.
2. Strive to uproot fear.
3. Endeavor to banish ignorance and superstitions about cancer. Nothing is so potent as person-to-person information, and opportunities for this are frequent among

friends and neighbors. A little bit of sound advice may save a life.

4. Stress the vital importance of seeking early competent medical advice, and the necessity for following that advice.
5. Avoid cancer quacks or guaranteed cures. There are no drugs or salves that will cure cancer; only x-ray, radium and surgery or a combination of these have been proved effective.
6. Support with your influence and your cash the 1949 campaign for cancer control. You or some member of your family may need to call on these funds sometime; it might mean tragedy if there were no funds to provide the needed treatment. It might mean life and happiness for you if funds are available. **Cancer can strike anyone, but you can strike back.**

Socialized Medicine Will Not Improve the Nation's Health

L. L. LONG, M.D.
Jackson, Miss.

(Guest Editorial)

The system of paying for medical care does not in itself play a major role in the health of a nation. Countries like France, Germany, and England had compulsory sickness insurance while the U. S. A., Australia and Canada has a private fee-for-service voluntary system, yet the death rate is not too far apart in any of these countries based on prewar figures.

The health of our nation is **no more** a national problem than is education. It is a right and an obligation of each state and territory which will be glad to listen to and receive aid from the national level. Education is the key to better health by: **Improving Living Standards:** Illiteracy and indifference in a people prevent them from accepting new advances in health practices and better wages, better housing and high living standards.

Better Nutrition: Better nutrition means a varied abundant diet. A country producing enough food which is supplied to its people who are not ignorant and superstitious and therefore are able to understand why and what-for varying foods are required.

Elimination of Economic Racial Inequalities: Elimination of racial economic inequalities is done by education of the masses. White populations have higher living standards than non-whites because they are usually more aggressive and desire to know more. The more ignorant classes tend to spread disease and not aid in its suppression.

Improved Preventive Health Measures: Improved preventive health measures rest on the doctors, nurses, and hospitals with public health agencies which must confine their activities to dissemination of health information, sanitation, immunization and communicable disease control, and preventive measures—**not curative.**

Encourage the Development of More and Better Medical Facilities:

a. Cars, radios, tobacco and liquor require much of our nation's spending money, whereas, proper education would make our people demand more medical care.

b. Federal aid should be confined to grants to the various states for use in medical care for:

1. The blind.
2. Dependent children.
3. The aged.
4. Control of disease.
5. Maternal health.
6. Public health.

And promote **much more** medical research and education and many more **physicians** and **hospitals.**

We must realize that many cases of illness are either created or aggravated by compulsory insurance. When it comes to an insurance blank even the purest in heart will lie. We do not believe American people are ready to spend untold millions to overseers of a plan of socialization, which has no horizon even, nor will they surrender their freedom of choice in worship, medicine or education to the scheming architects of cradle-to-grave regimentation.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

The Northeast Mississippi Medical Society meets in Corinth March 8. The program is good and the city of Corinth is a fine place to meet.

A reunion of the graduates of the University of Mississippi School of Medicine will be held on the campus at Ole Miss on April 1 and 2, 1949. Make your plans to be there. It will be pleasant and profitable. Remember the date.

We offer our sympathy to Dr. George F. Lull, general manager of the American Medical Association, in the loss of his fine wife. Dr. Lull is doing an excellent work through this great organization in earnestly seeking to meet the problem of medical service to all the people.

President-Elect B. B. O'Mara announces that he is anticipating some fine scientific exhibits at the state meeting held at the Buena Vista Hotel, May 10, 11, and 12. He will have a skeet shoot and golf tournament also, a nice trophy to be given in each. Things are looking fine for a big meeting. Our state meeting is of major importance. Make your plans now.

You will note the announcement of the Central Medical Society in this issue of the Postgraduate Seminar to be put on by the faculty of the Alabama Medical School on April 5, afternoon and evening. Alabama Medical School will no doubt show what our Mississippi Medical School should already be doing. We congratulate the progressive Central Medical Society.

The seventeenth annual assembly of the Southeastern Surgical Congress will be held in Biloxi, Mississippi, at the Buena Vista Hotel, May 23, 24, 25, and 26, 1949. Forty-three papers will be presented by distinguished surgeons of the South and the nation. The surgeon will find no better program than this in the nation. We welcome this meeting to our beautiful Mississippi Coast at the fine convention hotel, the Buena Vista.

You will note the cancer program to be held at Jackson March 11. This will be a fine meeting. Every doctor who can should attend. Cancer remains a major human enemy. It takes nearly 100,000 lives per year. If we would do as well as we know, almost half of these lives could be saved. Cancer is local in the beginning and it is curable in a large number of cases if treated by surgery, x-ray or radium in the early stages. We are making fine progress. But in order to be able to save the very large number whom we are now losing and who might be saved we must do a more thorough job educating the laity and we must increase our facilities also. The medical profession must also have a better understanding, better facilities, and put forth a greater effort to find and diagnose cancer in the early stage. Every doctor should have a trained nurse and every doctor should examine his patients, and many of our doctors need better equipment with which to do it. The progress we should make right now rests largely with the practitioner, although the cancer toll is a big challenge to the entire profession.

Socialized medicine continues to course the air waves and daily papers. The American people are not decided on it yet perhaps. The progress of free medicine has been phenomenal, whereas regimentation in medicine with government insurance has led backward. It is good economy for all the people to have the best in medicine toward which goal free medicine is steadily striving. The people who are in need of medical service are also in need of other things. Pills will not cure all human sickness. The modern clinic should have a consultation room to include the minister, the social, and economical consultants also. We need more education and a better understanding between the medical profession and the people. Everything that enters into the building of health assets, mental, physical and spiritual, must be considered. A better distribution of doctors would help greatly. We could have this now if the profession had the vision and the courage and the missionary spirit that it might have. The shortage of doctors constitutes a problem, but this can soon be solved. More and better hospitals are of the greatest importance. They are on the way. Grants from the national government, the state, and county, augmented by philanthropy, and church will keep hospital bills within the reach of the rank and file. People need to do what they can for themselves. There is a difference also in what a patient wants at a hospital and what he actually needs. But suffice it to say we have no medical urgency sufficient to call for the breaking of the patient-doctor relationship or placing upon the already heavily burdened people regimentation in medicine supported by taxation.

At the Mississippi Obstetrical and Gynecological Association which will be held at Buena Vista Hotel the evening of May 9, 1949, Dr. W. D. Beacham of New Orleans, Louisiana, will be the guest speaker at the banquet. The title of his paper will be "An Evaluation of Several Procedures Used in Gynecological or Obstetrical Practice."

The cancer meeting at Jackson on March 11 promises to be excellent. Mrs. Elizabeth N. Wates has been very active for this meeting, as has Dr. W. H. Parsons and the dependable war horse in the fight against cancer, Dr. Hugh Gamble, whose place on the Education Committee always keeps him on the job. Do your best to attend this meeting.

News and Comment

CANCER MEETING

SECOND BIENNIAL MEETING
MARCH 11, 1949

Mississippi Division—American Cancer Society
Convention Hall
Robert E. Lee Hotel
Jackson, Mississippi

Doctor's Symposium

Dr. W. H. Parsons, Presiding

1. "Carcinoma of the Esophagus."

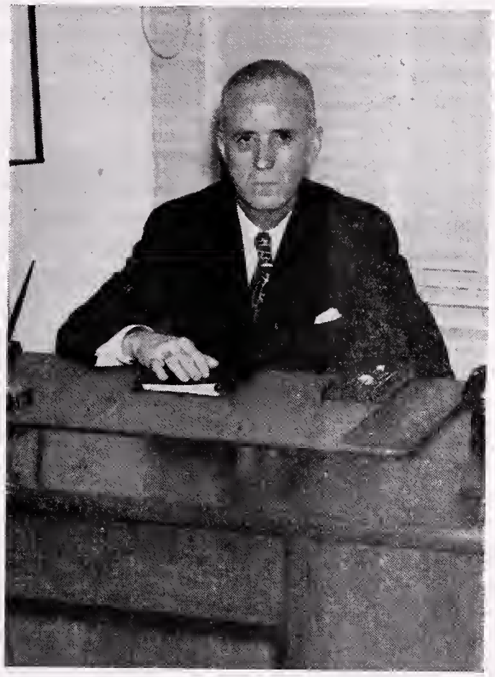
   By Dr. Frank Chunn, director of the Tumor Clinic, The Municipal Hospital, Tampa, Florida. Dr. Chunn is also Chief of Surgeons of that hospital and is one of the outstanding surgeons of the Southeast.

2. "Some of the Recent Progress in Cancer Surgery."

   By Dr. J. R. Heller. Dr. Heller is Director of Research of the United States Public Health Service and is a man of great distinction.

3 "The Statistical Survey of the Cancer Problem with Lantern Slides."

   Br. Dr. Edward P. Lehman. Dr. Lehman is Professor of Surgery at the University of Virginia and is an immediate past president of the American Cancer Society.



DR. W. H. PARSONS
Chairman of Cancer Committee

DR. HUGH GAMBLE
Educational Chairman of Cancer Committee

"Working Together for Cancer Control," is the theme of the Second Biennial Meeting of the Mississippi Division—American Cancer Society to be held in Jackson, Friday, March 11, at the Robert E. Lee Hotel. The program has been planned to interest lay and professional people and to show the importance of everyone combining his efforts in the control of cancer.

Some of the nation's outstanding leaders in the cancer control program will appear on the program. From the American Cancer Society there will be Dr. Charles S. Cameron, medical and scientific director; Mr. Mefford R. Runyon, executive vice-chairman; Mrs. H. V. Milligan, national commander Field Army; and Mr. Sal Cicetti, campaign headquarters. Invitations have been extended to cancer control leaders in bordering states as well as to the lay and professional leaders in the state. Plans for the program were worked out by the Cancer Committee of the Mississippi Medical Society under the direction of Dr. W. H. Parsons, educational chairman of the Cancer Committee and Dr. Hugh Gamble, chairman of the Cancer Committee in collaboration with the executive committee of the Mississippi Division of the American Cancer Society. Outstanding speakers will be:

J. R. HELLER, M. D.

Born in Fair Play, South Carolina, in 1905. Graduated from Emory University School of Medicine, Atlanta, Georgia, in 1929; postgraduate study and research at Johns Hopkins Hospital and at University of Virginia Medical School. In 1930, entered public health work as clinician from Georgia State Board of Health on a syphilis control project conducted jointly with the Public Health Service.

With Public Health Service since August 1931, specializing in venereal disease control and cancer control; since 1934 commissioned officer in the regular corps of the Public Health Service. Served in Syphilis Clinic at Hot Springs, Arkansas, as adviser to the health departments of Tennessee and Pennsylvania, in the U. S. Marine Hospital at San Francisco, in District 4, comprising the southeastern section of the United States, in Division of States Relations in Washington, D. C. In 1943, appointed chief of the Division of Venereal Diseases direction the wartime and postwar Federal program of venereal disease control. In the fall of 1947, attended the first postwar assembly of International Union Against Venereal Disease, held in Paris, and made survey for the American military authorities on civilian venereal disease control in the U. S. Zone of Germany.

Appointed director of the National Cancer Institute of the Public Health Service in May, 1948, where he directs the Federal Cancer program, including research conducted at the Bethesda laboratories, research grants-in-aid to other laboratories and hospitals, assistance to the States and Territories for training and control work, research fellowships and traineeships for advanced medical education of cancer specialists.

Dr. Heller will make an address at the first general session of the meeting and at the luncheon. He will participate in the symposium for doctors and in the public education session for lay people.

H

EDWIN P. LEHMAN, M. D.

Graduated of Harvard; Surgical Training at Peter Bent Bingham Hospital, Boston and Barnes at St. Louis. Professor of surgery and head of the Department, University of Virginia, Charlottesville, Virginia. Immediate past president of the American Cancer Society. Past president of the Southern Surgical Association. Member of the American Surgical and Southern Surgical Association; member of the Society of Clinical Surgeons; and member of the College of Surgeons. Dr. Lehman will address both the lay and professional groups at the Second Biennial Meeting of the Mississippi Division of the American Cancer Society, Friday, March 11, 1949.

C

C. FRANK CHUNN, M. D.

Graduate of Duke; M. S. in Surgery, University of Michigan; Surgical Training—Henry Ford Hospital, Detroit, and the Vicksburg Hospital. Head of the Department of Surgery, Tampa, Florida, Municipal Hospital; diplomate of the American Board of Surgery; fellow of the American College of Surgeons; member of the Surgical Association. Chief of the Tumor Clinic, Tampa Municipal Hospital. Dr. Chunn will participate in the symposium for doctors and in all of the open discussions of the second biennial meeting of the Mississippi Division of the American Cancer Society, Friday, March 11, 1949.

All Mississippi physicians are urged to attend and participate in the State Cancer Meeting. Recent trends in cancer research and experiments on the national level will be presented. Scientific film on the Cancer Diagnosis will be reviewed. An opportunity will be provided for you to meet and hear some of the leading cancer experts in America, an opportunity you cannot afford to miss.

Program

10:00 a.m. - 12:00 Noon

Welcome—Dr. Felix J. Underwood.

Panel—"Working Together for Cancer Control."

Dr. A. L. Gray, leader; Dr. B. D. Blackwelder, Miss Opal Regan, Miss Cassie Smith, Dr. Harvey Johnston, and Mrs. Campbell Banks, participating.

Address—Dr. John Heller, director of National Cancer Institute, Washington, W. C.

12:30 Noon - 2:00 p.m.—Luncheon—Mrs. Elizabeth N. Wates, chairman.

Introduction of Dr. John Heller, director of the National Cancer Institute, Washington, D. C.

3:00 p.m. - 5:00 p.m.

Symposium for Doctors—Convention Hall, Dr. W. H. Parsons, Vicksburg, chairman.

2:00 - 5:00 p.m. Roof—Public Education Session—Mrs. Elizabeth N. Wates, presiding.

Presentation of special guests.

"The American Cancer Society is Serving You"—Mr. Mefford Runyon, executive vice-president of the American Cancer Society.

Medical Care of the American Cancer Patient—

"Diagnosis and Treatment Given the ACS Patient in the Clinics"—Dr. Alton Ochsner, director of Ochsner's Clinic.

"Group Study of the ACS Patients by Participating Clinic Physicians" — Dr. Douglas Sprunt, director of West Tennessee Cancer Clinic.

"Follow-Up of the ACS Patients by the Clinic"—Dr. Ralph Braund, medical director of the West Tennessee Cancer Clinic.

"Terminal Care of the ACS Patient"—Dr. Charles Cameron, medical director of the American Cancer Society.

Making Campaign Plans—

"The Campaign Challenge" by Dr. Felix J. Underwood, State Cancer Executive Chairman and Mrs. H. B. Ritchie, Regional Commander.

"Community Organization for the Campaign by Miss Alta Mae Power, Hinds County health educator.

"Campaign Pointers" by Mr. Sal Cicetti, National Campaign Headquarters with Audience Participation.

"Special Projects" by Mrs. W. H. Waddell, Hinds County Unit Chairman.

"Coffee Day" by Mrs. Charles Ferguson, State Coffee Day Chairman.

"Campaign Goals."

7:00 p.m. - 9:00 p.m.

Banquet, greetings from Governor Fielding Wright; introduction of Dr. Herbert Lehman by Dr. W. H. Parsons; address—Dr. Herbert Lehman, past president of the American Cancer Society.

COMMISSION ON HOSPITAL CARE

Mr. J. O. Slaughter, chairman, presided over the regular meeting of the Mississippi Commission on Hospital Care held in Jackson, on Monday, February 14.

Two final grants were approved for hospitals—one of forty beds at Ripley in Tippah County at a total cost of $441,000, and another for an eighty-bed hospital at Columbia in Marion County at a total cost of $871,000. Contracts will be signed and constructions commenced immediately on these two hospitals. Also, final grants were made on the Sunflower County Health Department for a total cost of $66,000, the Lamar County Health Department for a total cost of $48,000, and the Oktibbeha County Health Department for a total cost of $58,000. All of these buildings will be under construction immediately as contracts have already been secured.

One new hospital was approved, a pretotal of $201,000, for a twenty-five-bed hospital to be built at Port Gibson in Claiborne

The Commission reviewed the hospital construction program. There are four hospitals under construction; one at Booneville at a cost of $611,000, one at Hazelhurst at a cost of $748,000, one at Ripley at a cost of $441,000, and one at Columbia at a cost of 871,000, a total cost of $2,671,000 in hospital construction now underway. The Clay County Health Department at a cost of $70,000 has just been completed. Winston County Health Department at a cost of $62,000 has just been completed. The Health Department in Attala County at a cost of $53,000 is half completed; in Franklin at a cost of $44,000 is 80 per cent complete; in Issaquena-Sharkey Counties at a cost of $51,000 is 65 per cent complete; in Rankin County at a cost of $31,000 is 75 per cent complete; in Washington County at a cost of $122,000 is 30 per cent complete; in Sunflower County at a cost of $67,000 will soon be under construction; and in Lamar County at a cost of $48,000 will soon be under construction as bids have been let. This makes a total of nine health departments completed or under construction, at a total cost of $416,000. The total cost of all projects completed or under construction now totals slightly over $3,000,000. The Commission reviewed reports which indicate that the scheduled $7,500,000 worth of construction would be underway by July 1, and it is expected that the program will continue for five years under federal and state grants.

THE MEDICAL COLLEGE OF ALABAMA MEDICAL POSTGRADUATE SEMINAR

at

Jackson, Mississippi—April 5, 1949

ROBERT E. LEE HOTEL

The Central Medical Society invites the medical profession to a postgraduate seminar presented by the Medical College of Alabama.

No Registration Fee—Dutch Banquet—A Real Medical Treat

CONVENTION HALL—ROBERT E. LEE HOTEL

2:00 P. M. — Dr. T. E. Wilson Presiding

2:00 - 2:30 The Significance of Hematuria—Dr. Bruno Barelare, Professor and Chairman of Department of Urology.

2:30 - 3:00 Diagnosis and Management of Subarachnoid Hemorrhage—Dr. J. Garber Galbraith, Associate Professor of Chemical Surgery (Neurosurgery)

3:00 - 3:30 Action, Use and Abuse of Certain Antibiotics—Dr. Charles H. Winkler, Jr., Assistant Professor of Bacteriology and Clinical Pathology.

3:30 - 4:00 The Management of Peptic Ulcer—Dr. James S. McLester, Professor and Chairman of Department of Medicine.

4:00 - 4:30 Management of Gastroduodenal Ulceration—Status of Vagotomy—Dr. Robert F. Guthrie, Associate Professor and Executive officer of Department of Surgery.

4:30 - 5:00 Diagnosis and Treatment of Skin Cancer—Dr. Ray O. Noojin, Professor and Chairman of Department of Dermatology and Syphilology.

5:00 - 5:30 The foregoing speakers will sit for a discussion period. Those attending the meeting are invited to ask questions on the subject material presented during the afternoon session.

Moderator—Dr. J. R. Garber, Professor and Chairman of Department of Obstetrics — Chairman Postgraduate Seminar Committee.

5:30 - 6:30 Cocktail Hour (Roof Garden)—Kay Surgical Company of Memphis and Jackson will exhibit and entertain all attending the meeting at this time on the roof—Robert E. Lee Hotel.

6:30 Banquet—Convention Hall—Dr. T. E. Wilson, Presiding.
Prevention, Diagnosis and Treatment of Cancer of the Female Genital Organs—Dr. W. Nicholson Jones—Professor and Chairman of Department of Gynecology.
Diagnosis and Treatment of Leukemia—Dr. Roy R. Kraeke, Dean of Medical College of Alabama, Professor of Clinical Medicine.
Discussion—Dr. James R. Garber—Moderator.

The presentation by the Medical College of Alabama Faculty brings to Mississippi Medicine a well recognized need. It is being presented in the center of the state. It is available to all ethical white physicians and is sponsored by the Central Medical Society.

Kay Surgical, Inc., will be the surgical supply exhibitor and host for the cocktail hour.

No registration—No fee—Dutch Banquet.
The Central Medical Society—Jackson, Mississippi.
Dr. T. E. Wilson, President.
Dr. L. T. Carl, Secretary.

DOCTORS ENDORSE EDITORIAL

RESOLUTION

The following resolution was introduced February 10 by Dr. Jere L. Crook, past president, at the business session of the Mid-South Postgraduate Medical Assembly:

We, the members of the Mid-South Postgraduate Medical Assembly convened for its sixtieth annual session at Hotel Peabody, Memphis, Tennessee, with approximately fourteen hundred physicians in attendance, hereby record our sincere appreciation of the editorial in the *Commercial Appeal* of Sunday, January 30, 1949, entitled "Science Must Be Free." Appearing in a paper with the wide circulation and powerful influence of the *Commercial Appeal,* this editorial, based on a thorough and comprehensive study of history and a logical and convincing deduction from the truths revealed in that study, presents an irrefutable conclusion that socialized medicine is a menace to the health, welfare and freedom of the American people.

We physicians, the inheritors of the ideals contained in the Hippocratic oath, and the lofty sentiments of Ambroise Pare, who humbly gave to Almighty God the credit of the healing of the patients to whom he ministered, are deeply indebted to the writer of the aforesaid editorial, which has lifted our fight against the jeopardy of socialized medicine to a higher and holier level.

SCIENCE MUST BE FREE

Thanks to an intelligent action of the Bismarck government in Germany in 1883, Scientist Robert Koch was named head of a commission to visit Egypt and India to study the dreadful plague of cholera, which had scourged man through the ages. As a consequence of this expedition financed by the government, Koch was able to identify the organism which causes cholera, and moreover, to demonstrate that it is transmitted by water.

This, a benefaction of note for the human race, is a far cry from another government inspired and manipulated series of medical experiments—those under Hitler's Nazi regime in the late 1930s and early '40s, when scientists in Germany were under the thumb—or heel—of government.

In the case of Robert Koch in 1883, he had absolute freedom to approach the problem with open mind, and to learn the truth if possible. Under the Nazi regime, scientists were given a political conclusion and instructed to find "scientific" evidence to support that conclusion.

There is a vast difference. In the first instance, a scientist immolates his life into a passionate quest for truth, let truth fall where it will. In the second, he ceases being a scientist, and becomes a propagandist gathering questionable and often unreliable evidence in support of a political theory.

The record of Nazi-controlled pseudoscientists in the Germany of 1933-45 is a sad one in human history. Helpless folk, often the infirm and the aged, were employed as guinea pigs to enable these curiosity-mad dabblers in science to prove some pet theory. Forgotten entirely was the ancient creed stated by Hippocrates, Father of Medicine, that the doctor's mission is to preserve, not destroy life. Forgotten was the magnificent concept of the doctor's close relationship with a higher power as expressed by Ambroise Pare, who remarked: "I dressed him, God healed him." Spurned was the doctrine that life is a precious spark, to be fanned with every resource at the scientist's command.

Rather, many pseudo-scientists under the Nazi rule came to look upon life as of no more value than as much vapor in a test tube, upon the human body as a mechanism to be torn apart so that they could see what made it go. All the better, so the doctrine taught, if the body belonged to one not spiritually in accord with the then dominant rulers.

And therein lies the peril of a situation in which politicians meddle with things which by every standard of social ethics and human decency belong on the personal level. As the Nazis were able to corrupt medicine in National Socialist Germany, so can politicians in other lands effect the prostitution of science. Therein lies the danger if medicine should come under control of Federal or even state agencies. Science has to be free, or it ceases to be science. Science can never be nationalistic. In its highest sense, it transcends even patriotism, for scientific truth survives long after political dynasties have succumbed.

It is one thing for government to encourage research, and to maintain agencies for the preservation of public health, and another for government to reach the hand of politics into that sacred relationship between healer and patient. For there is something not seen with eyes in that relationship, a nebulous transfer of faith and confidence, hope and belief, which cannot be written in Latin on prescriptions, but which have such a significant part in the healing process.

The healer must be left free to perform the dressing as best he knows, and the patient needs to feel that he is getting something more than mere medicine and dressing. He needs that personal touch, which would disappear if that patient should become a serial number.

To the everlasting honor of most physicians, they bring to their patients' bedsides that personal touch. As in all other realms of human society, charlatans, fee-grabbers and the knife-happy fraternity have undermined some of that confidence the public rightly has reposed in the profession for so long. No one else but the doctors themselves can claim and hold that confidence, and they are striving to deserve it.

They are making an honest effort to keep their ethics sacred, and rightly enough, they are resisting all efforts to institutionalize and mechanize their art. Many in their own ranks have called for reforms, for at least 150 years in this country, and daily more of them are becoming aware of those abuses which opened the door to the clamor for socialized medicine. Wise doctors, and their name is legion, know that their best defense against politically dominated medicine is unimpeachable honesty and integrity within their own ranks.

There's a striking parallel between the clamor for socialized medicine and demands for censorship, and the perils are identical also. If medical men live by their ethical standards, there can be no threat of socialized medicine, just as there can be no clamor for censorship if publishers and others assume the responsibilities which go along with their rights and privileges.

Medicine is one of the arts that must be protected from political infiltration.

DEATHS

DR. J. L. McGEE

Services were held for Dr. John Lucius McGehee, the "dean of Memphis surgeons" who died at Baptist Hospital February 16 at Calvary Episcopal Church in Memphis. Burial was in Como, Miss.

Dr. McGehee, who was 70 on January 2, had a Southwide reputation as a surgeon and medical professor. He retired last year after 46 years as a professor at the University of Tennessee College of Medicine, but maintained an office for private practice at Baptist Hospital where he was a staff surgeon. He remained active until February 10 when he entered the hospital, as a patient, with a heart ailment.

Graduated at 20

Born and reared in Como, Dr. McGehee attended Millsaps College at Jackson, Miss., and the University of Mississippi before entering the old Memphis Hospital Medical College. He was graduated at the age of 20 and had to wait a year before he could begin his practice.

He interned in Memphis hospitals, studied further in Chicago and returned to his alma mater as professor of physiology in 1902. After serving as a Medical Corps major in World War I, he returned to the college as assistant professor of surgery and in 1933 was made head of the surgery department.

Helped Found Board

He was a fellow in the American College of Surgeons, vice president of the Southern Surgical Association, member of the Southern Surgical Congress and one of the local founders of the American Board of Surgery.

Dr. McGehee lived at 3034 Southern, Memphis.

He leaves his wife, Mrs. Louise McGehee; two daughters, Mrs. J. W. Warpe of Memphis and Mrs. Robert Barlett of St. Louis; a son, J. Lucius McGehee, Jr., of New Orleans, and two brothers, Eugene and Alger McGehee of Memphis.

Pallbearers will be I. T. Rhea, Dr. W. D. Stinson, Dr. Lyle Motley, Dr. Eustace Semmes, Dr. Morton J. Tendler, Dr. Frank Smythe, Dr. Tom West, Dr. W. W. Taylor, Dr. Duane Carr and Dr. Thomas D. Moore.

DR. R. E. POUND

Services were held February 8 in Canaan, N. H., for Dr. Robert Earl Pound, well known roentgenologist, of New York City who was born in Lee County. According to his wishes his body was cremated. Dr. Pound was 55.

He was apparently recovered from an illness last fall when he died suddenly of a cerebral hemorrhage.

The son of R. L. Pound and the late Mrs. Edna Earl Sparks Pound, he was born in Nettleton and came to Tupelo as a small boy. He attended the University of Mississippi and was graduated from the University of Virginia Medical School.

He was a major in the first World War after which he specialized in x-ray work and roentgenology.

He leaves his wife and two adopted children, Donald Lee Pound and Judy Pound of New York; his father and stepmother, Mr. and Mrs. R. L. Pound of Tupelo; and a half brother, Lieut. Frank Pound, Munich, Germany.

DR. W. V. SAUL

Dr. W. V. Saul, of Montpelier, beloved physician of Clay County, died in West Point Feb. 4 at the age of 91. He was born in Palo Alto in 1858, and the entire span of his long and useful life was spent in his native county. He devoted more than 50 years to the practice of medicine, and was active until health forced him to retire some six years ago.

Dr. Saul is survived by three living children, Steve S. Saul and Mrs. Jim Cliett of West Point, and Tom G. Saul, formerly of West Point, and now of Parchman, Mississippi. Dr. Saul's wife preceded him in death by several years.

He was an active member of the Christian Church of Montpelier, and had been a Mason for more than 50 years.

He was a graduate of the University of Louisville and never practiced medicine outside of Clay County.

DR. CARL HORNE

Dr. Carl Horne, a physician at Ripley, Tenn., was found shot to death in his home here last night.

Lauderdale County Sheriff Willard Norvell said Horne had shot himself in the mouth with a pistol. He said the death was listed on his books as a suicide.

POSITION WANTED

Internist—36—Board eligible—desires association with group or clinic. Sub-specialties cardiology and gastroenterology. Immediately available.

Robert J. Freedman, M.D., Veterans Hospital,
Alexandria, Louisiana

UROLOGICAL POSTGRADUATE SEMINAR

The American Urological Association through its Southeastern Section announces a Urological Postgraduate Seminar to be held in New Orleans, Louisiana, April 18, 19, 20, and 21, 1949. The seminar will be under the auspices of the Division of Graduate Medicine, Tulane University School of Medicine. William D. Frye, M.D., dean of the Graduate School of Medicine, will be the director of these courses in collaboration with the officers and executive committee of the Southeastern Section and with the representative of the Central Committee.

The course is designed especially for young urologists, urological residents, surgical interns especially interested in urology, and physicians and surgeons who do diagnostic urology (part time). It will be of special value to those preparing for the American Board of Urology, but will afford an excellent review for all urologists.

The courses will be limited to 150 registrants. The cost will be $50.00 except for urologic residents.

Address inquiries and applications to:

Wm. W. Frye, M.D., Dean, Graduate School of Medicine, Tulane University, New Orleans, Louisiana.

Dr. Frank L. Ramsay of Laurel, Mississippi, is your state's representative on the Executive Committee of the Postgraduate Seminar of the Southeastern Section of the American Urological Association and he will be glad to receive communications concerning the course.

HOSPITAL COMMISSION REVIEWS PROGRESS

A joint meeting of the Mississippi Commission on Hospital Care, which was designated by a recent law as the state hospital licensing authority, was held with the Advisory Hospital Licensing Council on February 14, with Mr. J. O. Slaughter, chairman of the Commission, presiding.

A report from Mr. John Gill and Dr. Kirl Avent in regard to minimum standards for all hospitals in the state was reviewed, and the minimum standards now used by the State Hospital Association was adopted as a pattern for guidance in setting of the standards.

After study and discussion, the Executive Committee, composed by Mr. Owen Cooper, Dr. Felix J. Underwood, and Dr. W. L. Shackelford, with Mr. John Gill and Dr. Kirl Avent of the Licensing Council, were directed to proceed with compilation of the final minimum standards. As soon as these standards have been completed they will be issued to all of the hospitals in the state and the state licensing program will be underway.

The members of the Licensing Council are: Dr. Kirl Avent of Grenada, Dr. R. C. Field of Centreville, Dr. W. H. Anderson of Booneville, Mr. John Gill of Vicksburg, Mr. R. M. Castle of Meridian, Mr. John R. Watts of Pascagoula, Mrs. George Lampton of Columbia and Monsignor Joseph Brunini, of Jackson, Mississippi.

AMERICAN BOARD OF PREVENTIVE MEDICINE

The American Board of Preventive Medicine and Public Health, Incorporated, was approved by the Advisory Board for Medical Specialties and by the Council on Medical Education and Hospitals of the American Medical Association at their meeting on February 6. This board is therefore prepared to accept applications for examination for certification in this specialty.

As indicated in the attached bulletins, the requirements for certification include general qualifications, such as moral and ethical standing in the profession, adequate training in medicine and interneship in an approved hospital, and licensure to practice medicine in the United States. Eligibility for examination also requires that the applicant have special training and experience in preventive medicine and public health of at least six years following interneship. This must include special academic training, or its equivalent, and field training or residency meeting the standards set up by the Board.

Applications may also be received for the Founders Group who may be excused from examination. The by-laws authorize a Founders Group made up of practitioners of preventive medicine and public health who have attained unquestioned eminence in the field. The Founders Group presumably will include persons having attained eminence as indicated by academic appointments at the level of professor or associate professor of preventive medicine and public health, or who have held positions of eminence and responsibility for a period of not less than ten years in this field.

ANNOUNCEMENTS

Dr. H. Earle Conwell announces the opening of his offices February 1, 1949, 811 South 20th St., Birmingham, Alabama, practice limited to fractures and other orthopaedic conditions.

LOWNDES COUNTY MEDICAL SOCIETY

IN MEMORIAM

The members of the Lowndes County Medical Society, in regular session, deeply regretting the death of their colleague, Dr. J. T. Doster, Jr., wish to express to Dr. Doster's family their deepest sympathies.

Dr. Doster was a staunch supporter of the society and very interested in its growth and progress. In fact, one of the main interests in his life was the advancement of the caliber of medical practice and facilities in Columbus. He spared neither his physical, mental, nor material resources toward the attainment of this goal. It is especially regretted that he did not live to see the further progress of the Cancer Clinic which he organized almost alone and which has proved to be a great help to unfortunate sufferers in this and surrounding communities. The passing of Dr. Doster has left a permanently vacant seat at our meeting table.

Lowndes County Medical Society
T. C. Naugle, President
J. F. Lewis, Secretary
January 31, 1949

IN MEMORIAM

(Adopted by members of the Clay County Medical Society.)

DOCTOR JOHN EDWARD ELLIS

WHEREAS, this Society, by the recent death of Doctor John Edward Ellis, has suffered the loss of another of its members who, throughout a most useful and successful career of more than forty continuous years of unselfish service to his fellow man, constantly exemplified the highest standards and ideals of the medical profession; and

WHEREAS, "John Ed." as he was affectionately known to the members of this Society and to a multitude of friends in his native Clay County and throughout the state, was so universally admired by his fellowmen—professional and otherwise—for his professional skill and knowledge, his fidelity and integrity, his cheerful, friendly, generous, and charitable nature and his Christian attributes, that his passing occasioned a widespread feeling of distinct loss and sorrow to this Society and this community;

NOW, THEREFORE, BE IT RESOLVED, that the Clay County Medical Society does hereby recognize and record its loss in the passing of Doctor John Edward Ellis and its appreciation of his fine contributions to this Society and to mankind; and

BE IT FURTHER RESOLVED, that this Society hereby extends and tenders its condolences and sincere sympathy to the family and loved ones and to the many friends of Doctor John Edwards Ellis; and

BE IT ALSO RESOLVED, that this resolution be recorded in the permanent records of this Society, and that a copy thereof be sent to the family of Doctor John Edward Ellis, and also, that a copy be sent to the *Mississippi Doctor* for publication.

DEATHS

DR. VIRGINIA HICKERSON

Many friends in Jackson will learn with deep regret of the death at Cincinnati of Dr. Virginia Hickerson, resident physician at the Dunham Hospital Home in that city.

Dr. Hickerson spent her childhood and early girlhood in Jackson. She was the daughter of Dr. and Mrs. W. A. Borum, the former having served a goodly number of years as pastor of the First Baptist Church in Jackson.

Dr. Hickerson was the wife of Dr. William D. Hickerson, assistant medical director of the Union Central Life Insurance Company, and director of tuberculosis control in Mississippi from 1938 to 1942. During that period his talented wife was resident physician at the Mississippi Tuberculosis Sanitarium.

At the Dunham Hospital Home in Cincinnati Dr. Virginia Hickerson specialized in child welfare work. Her husband served four years as superintendent of the institution after the family left Mississippi.

Besides her husband, who was superintendent of Dunham Hospital from 1942 to 1946, she leaves a daughter, Miss May Burrows Hickerson, of Cincinnati; two brothers, the Rev. Winston F. Borum, Shreveport, La., and Charles S. Borum, Arlington, Va., and three sisters, Mrs. Ansel Caine, New Orleans; Mrs. W. B. Sowash, Anderson, Mo., and Mrs. Harvey C. Reese, Nashville, Tenn.

DR. ROBERT LOWRY

Services for Dr. Robert Clarence Lowry of Boyle, who died suddenly January 12, were held the following Sunday. He was sixty-eight.

Born in Pontotoc County, Dr. Lowry began the practice of medicine in Bolivar and Sunflower counties in 1919. After the completion of his study at the Plymouth School near Pontotoc Dr. Lowry studied at the Medical School at the University of the South in Sewanee, Tenn. He graduated from the Medical School at the University of Tennessee. Dr. Lowry was a member of the Mississippi Medical Association and the Delta Medical Association. He was a senior deacon in the Baptist church at Boyle.

Dr. Lowry leaves his wife, Mrs. Estelle Amacker Lowry of Boyle; three daughters, Mrs. M. M. Gee of Dallas, Texas; Mrs. W. W. Hanks of Worland, Wyo.; and Mrs. J. E. Lipe of Denver, Colo.; two sons, L. A. Lowry of Knoxville, Tenn., and A. L. Lowry of Boyle; two brothers, Dr. D. O. Lowry of Cooper, Texas, and J. M. Lowry of Pontotoc; five sisters, Mrs. Sid E. Harris of McAllen, Texas; Mrs. Mary E. Gilmer of Indianola; Mrs. W. W. Weatherall and Mrs. Martha Pyle of Pontotoc; and Mrs. Willie Hobbs of Cooper, Texas; and eight grandchildren.

DR. W. T. COLLUM

Services for Dr. William Thomas Collum were held January 15 in Fulton.

Dr. Collum, for many years one of Itawamba County's leading physicians, died at Tupelo Community Hospital, where he became a patient Jan. 5. Dr. Collum had been in ill health for about fifteen years. Dr. Collum refused to retire and even after becoming ill was elected supervisor of the First District, in which office he served two terms.

He was 72, and always brought a smile when he said that everyone in the United States celebrated his birthday—he was born on July 4.

Graduated from the Old Oakland College, which was near his home in Itawamba County, he taught school for few years at Liberty in Itawamba County before attending the University of Tennessee College of Medicine, from which he was graduated in 1904. Immediately upon his graduation he returned to his home near Fairview and began practice. He lived in the same community in which he was born all of his life.

He was elected supervisor of the First District of Itawamba County in 1939 and served two terms in the office. He did not run for reelection in the primaries of 1947 due to his failing health.

His father, Robert Sanford Collum, was one of the early settlers of the northeastern part of Itawamba County. His mother, Mary Johnson Collum, was also a member of a pioneer Itawamba family.

He was at one time one of the largest land owners of the First District of Itawamba County, holding more than 2000 acres of farm lands.

His wife, Belle Funderburk Collum, died about five years ago. He leaves a brother, Dave Collum of Jefferson, Texas; six sons, Dr. T. B. Collum of Ada, Okla., T. L. Collum of Zion, Ill., T. E. Collum of Golden, Miss., T. C. Collum of East Central State College in Ada, Okla., and B. T. Collum, who is a student of the University of Mississippi; six daughters, Mrs. Ethel Hall of Fort Worth, Texas, Mrs. George Williamson of Red Bay, Ala., Mrs. Elmer Collier of Tupelo, Mrs. Elton Bostick of Golden, Mrs. A. J. Jones of Fort Worth and Mrs. Fred Davis of Pickwick, Tenn.

Interpreting Medical Literature

STAFF OF REVIEW

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

DERMATOLOGY

ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY—Vol. 55, No. 1, Jan., 1947, Bal (British Anti-Lewisite). L. L. Waters and Chester Stock, Science 102: 602 (Dec. 14) 1945.

An antiarsenical, 2, 3- dimercaptopropanol, called Bal (British Anti-Lewisite), an agent effective several arsenical war gases, has been found of therapeutic value in certain cases of arsenical poisoning encountered in civilian medicine.

Dimercaprol is not an innocuous substance inasmuch as profound toxic effects—for example, apathy, lacrimation, blepharospasm, conjunctival edema, salivation, vomiting, muscle tremors, convulsions coma, and death—have been noted in animals to which it has been administered. These striking physiologic and metabolic changes are not accompanied by comparable morphologic alterations. In the skin it causes localized erythema and edema, but to mucous surfaces it is extremely irritative, producing severe edema and ulceration.

In man, solutions or ointments or sterile peanut oil—benzyl benzoate solutions (for intramuscular injections) containing 5 to 10 per cent dimercaprol are well tolerated. Inunction of a total of 1 cc. of undiluted dimercaprol or of 2 Gm. in a jelly base also fails to produce toxic effects.

Of more than 200 patients treated in the United States and England, the majority have had either arsenical dermatitis or hemorrhagic encephalitis after the administration of oxophenarsine hydrochloride. Included, however, are some patients who had massive overdoses of arsenical drugs and other less common manifestations of arsenical poisoning. The available data strongly suggest that this drug is effective in such cases and probably is of value in some cases of blood dyscrasia resulting from arsenotherapy. It appears to be of no value in cases of so-called arsenical jaundice.

In addition it has been given a preliminary clinical trial in the treatment of mercurical poisoning, and the results have been most encouraging.

PEDIATRICS

MANAGEMENT OF ALLERGIC DISEASE OF THE RESPIRATORY TRACT IN CHILDREN—George B. Logan, Mayo Clinic, Rochester, Minn., Pennsylvania M. J., 51:739-46, April, 1948.

"The keystone of adequate management in allergic respiratory disease in children is a thorough history. A study of the home as well as the influence of season, infections, psychogenic factors, foods, and human and animal contacts warrant consideration. A careful physical evaluation, roentgenogram of the chest, and complete blood count should be part of every examination. A stained smear of nasal secretions for eosinophils, to be repeated if negative, is often helpful. The persistent absence of eosinophilic leukocytes casts doubt on an allergic basis.

"Potent antigens must be used for skin tests. At the Mayo Clinic the scratch test is used on children up to 5 years of age, with occasionally selected intradermal tests. Intradermal tests are used on older children, but at times are preceded by scratch tests. All antigens giving positive skin tests may not be etiologic factors and the degree of skin reactivity need not parallel the severity of the allergic disease. Some form of elimination diet or food diary is superior to skin testing for detecting offending foods. While foods may be more important etiologically in younger children, the role of inhalant substances must not be neglected.

"Both seasonal and nonseasonal allergic rhinitis are relieved by removal of the offending antigen. The use of air filters and other measures to render the home dust-free are recommended. Children suffering from mild hay fever are directly treated with the recent so-called antihistaminic drugs. This approach is not advised in perennial forms, when a quest for the cause must be pressed. Should the symptoms be severe or complicated by asthma, specific hyposensitization is always practiced, complemented by one of these drugs if desirable. The recommended dose of pyribenzamine or benadryl is subject to frequent variation depending on daily or seasonal environmental changes. At the moment specific hyposensitization still constitutes the best time-proved method for the treatment of seasonal rhinitis of allergic etiology. The use of the preseasonal and coseasonal plan is favored with twice weekly injections of one-half to one-fifth the maximal dose.

"In asthma, it is essential first to be certain of the diagnosis, so often confused with other conditions of childhood. An air-conditioned room promptly relieves the acute attack, but of readier accessibility are the drugs tabulated below:

Drug	*Action*	*Route*	*Dose*
Epinephrine	Reduces bronchial edema and counteracts spasms by sympathetic stim.	Subcutaneous 1/1000 Nebulizer 1/100	0.2-0.3 cc. 2-4 inhalations
Ephedrine	Same	Oral	12-25 mg. (3/16-3/8 grain)
Propadrine	Same	Oral	
Theophylline	Counteracts bronchospasm by direct action on smooth muscle	Oral	(0.03-0.3 Gm. Rectal (0.15-0.6 Gm.)
Theophylline with ethylene diamine		Oral Rectal Intravenous	50-100 mg. 0.12-0.48 Gm. 0.12-0.24 Gm.
Benadryl, Pyribenzamine	Antagonize histamine; spasmolytic (?)	Oral	2 mg. per lb. body weight

Epinephrine in oil does not demonstrate the expected advantages of slower absorption, and the oil itself may cause reactions. A new drug, "Isuprel," is said to increase vital capacity, and may be given orally, subcutaneously or by nebulizer.

Although there is disagreement as to the exact value of antihistaminic drugs in asthma, they yield favorable results. Experience indicates the necessity of their administration very early in the course of an attack. They are of no benefit in chronic asthma or well established attacks. In many cases of "asthmatic bronchitis," they have been helpful. Recent work describes some synergistic action when ephedrine is used with benadryl or pyribenzamine.

When an attack is of some duration, the secretions become viscid and tenacious. Methods used to advantage under such circumstances are outlined:

Agent or Drug	*Method of Administration*	*Dose*
Moist air	Steam room Steam tent Mechanical humidifier	High humidity
Moist air	Humidifier in oxygen tent By nebulizer	Ample
Iodides, sodium or potassium	Oral, saturated aqueous solution	5 drops t.i.d. (2 yrs) 25 drops t.i.d. (8-10 yrs)
Ipecac	Oral, as syrup for emetic effect	1 tsp., repeated if necessary
Carbon dioxide and oxygen	By mask: 10% carbon dioxide and 90% oxygen	Intermittent inhalations
	By tent 20-25% oxygen and 2.5-4% carbon dioxide	Several hours in tent

The use of 80 per cent helium: 20 per cent oxygen mixtures by mask is advocated in some attacks. Rectal ether in olive oil is indicated in status asthmaticus. At times bronchoscopy is of value in removing inspissated material from the bronchial tree. Morphine is condemned, preference being shown for barbiturates or demerol when sedation is desired. Atrophine and belladonna are contraindicated. Ethylene disulfonate is of no value."

COMMENT: This is a most important subject and one in which all physicians, regardless of type of practice in which engaged, should be very much interested to read. There are only a few points in which we would be inclined to differ, and one of those is the administration of ipecac either alone or in cough syrups. This is not so valuable. The iodides in certain types of cases only are, in our experience, of any value. The moist air is certainly of advantage in asthmas of all types, and the administration of oxygen and helium combined, also. A combination of helium seems to be of more benefit than just the oxygen alone. Never use morphine or belladonna. Both of these are certainly contraindicated in all types of asthma. Codeine is very good, but not used to any great extent.

VA CLINICAL REPORT

Patient was a 56-year-old, Puerto Rican woman who had suffered from shortness of breath, weakness, and dizziness with occasional fainting spells for 9 months prior to admission.

Past History: At the age of 37 years, pt. was operated on for a tumor of the womb and has not menstruated since. At the age of 50 years she had a rash over the entire body due to sensitivity to food and was treated by a diet. The rash disappeared after several days and did not reappear. The family history was irrelevant.

Physical Examination: Patient was well developed and nourished woman without respiratory distress or complaints. There were few moist rales over both lungs. The heart showed a very faint PMI just outside the midclavicular line in the 6th ICS. The cardiac dullness extended from the left anterior axillary line to the right mid-clavicular line. The sounds were of fair quality and regular at 90/min. Bl. Pr. 250/150. A basal soft systolic blowing murmur not transmitted to neck vessels or apex was heard. The abdomen showed a healed mid-line scar. The liver was palpable one F.B. below costal margin. There were no edema, jaundice, clubbing of fingers or abnormal reflexes.

X-ray examinations: Shortly after admission the heart was found to be enormously enlarged and CTR was 90. Impression was that of a large heart with pericardial effusion. Numerous subsequent x-rays were essentially the same. Four months before death a small amount of fluid was visualized in the left pleural cavity.

EKG: Several EKG's taken throughout the course revealed left ventricular preponderance and myocardial damage with digitalis effect.

Course: Patient was digitalized, was given phenobarbital gr ss q.i.d. and papaverine gr. I., t.i.d. and put on Grollman diet with multivitamin supplements. She continued to complain of occasional headaches and weakness, but was otherwise comfortable. Her basal rales disappeared and she was ambulatory and remained on the ward as a chronic case. Her blood pressure, however, remained high ranging from 220/130 to 300/155.

Six months before death the Bl. Pr. was 285/140 and approximately the same in both arms and legs. The heart findings were the same as at admission. There were no basal rales. The liver was 4 F. B., and the spleen 2 F. B. below the costal margin. No peripheral edema was present. About that time, pt. while returning from the bath room collapsed suddenly and examination a few minutes later revealed cyanosis, slow, and irregular heart sounds, and B. P. 300/100. Pt. regained consciousness within ten minutes and complained about substernal pain. The heart tones improved slowly and the rhythm became regular at 80. EKG taken soon after was not different from previous findings. During the next 10 weeks patient improved and was out of bed. Besides her former complaints of headaches and weakness she showed also a weight loss of some 15 pounds.

About three months before death patient complained of much more severe and frequent headaches, was less active and stayed in bed a great deal of the time. Because of the untractable headaches she was given slowly 300 mg. of Etamone I.V. A few minutes after the injection there was a precipitous drop in blood pressure and patient went into coma. The heart tones were weak and rapid and pulse and blood pressure were unobtainable. There was twitching of the extremities but no convulsions. Adrenalin 0.5 cc. I.M. had only transitory effect and the same dose I.V. was necessary to restore the original B.P. of 230/140 and rouse patient from the coma. After one-half hour she went into a maniacal phase and had to be sedated. The cardiac rhythm had become bigeminal which was confirmed by

EKG. Five hours after the injection she was back to her original status and the coupled rhythm had disappeared.

Following this episode patient continued to complain of severe headaches and became irrational at times. She also complained of blurred vision and 2½ months before death edema of the optic discs was detected. In spite of I.V. $MgSO_4$ given daily for a week her mental condition deteriorated and the B.P. remained high. Two months before death a spinal tap revealed a pressure of 180 mm. and 15 cc. of fluid was removed slowly but without improvement. Smear and culture of the fluid were negative.

About one month before death patient was irrational continuously and was bedridden. Repeated urea N. determinations were below 35 mg. per cent except one which was 60 mg. per cent. One week before death the spleen was no longer palpable. Soon after patient had two general convulsive seizures and expired quietly two days later, one year after admission.

State Board of Health

Felix J. Underwood, M. D.

RURAL EPIDEMIOLOGY*

Kirk Mosley, M.D.
Department of Tropical Medicine and Public Health
Tulane University School of Medicine

It is most fortunate that progress in the field of epidemiology has not been impeded even though no one has been clever enough to define just exactly what is meant by epidemiology. Instead of dwelling on the various concepts and definitions of the word, it is simpler to state that epidemiologists are interested not only in the occurrence of diseases but are also curious as to why and under what circumstances a disease or an epidemic makes its appearance. In seeking the answer to the "why of disease," the science of epidemiology has developed.

Epidemiology, as a science, has not always flourished. As long as medical opinion favored theories such as demon possession, putrid miasmata, or epidemic constitutions of the atmosphere, there was little or no incentive to investigate the epidemiology of disease. The acceptance of theories delegating to supernatural forces the genesis of human ills, tended to stifle the natural curiosity of man which is so fundamental to any science including epidemiology. However, in every age, there have been men who, by disregarding the currently popular theories of their time, have made worthy contributions to the field of epidemiology by their keen observations of the events and circumstances associated with the outbreak of disease and epidemics. Through the efforts of numerous pioneer investigators and with the development of medical science, we now believe that the occurrence of a disease or an epidemic simply represents the end result of a series of perfectly natural biologic processes. It is the clarification and comprehension of these biologic processes, with proper evaluation of related circumstances, which constitutes the major objectives of epidemiology.

Since the biologic processes giving rise to an infection or a disease state in man are often complex and occur as an interwoven series of events, achievement of the objectives of epidemiology requires the skills and technical developments of a wide variety of scientific specialties. This is well illustrated by the special units organized during World War II for malaria control and for the investigation and control of typhus fever. The units used for malaria control by the Army included in their personnel trained entomologists, parasitologists, and sanitary engineers. Several of these units were under the direction of a medical officer who served in the capacity of a medical malariologist. The personnel of the Field Party of the American Typhus Commission, which carried out extensive investigations in Northern Burma on the epidemiology of scrub typhus fever, consisted of a large group of scientists of diverse specialities such as one would expect to find only in a large university or medical center.

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*Presented at the Annual Meeting of the Mississippi Public Health Association, Jackson, Miss., December 6, 1948.

While epidemiology draws upon many branches of science for its development and progress, one does not have to be an expert in any particular field to apply epidemiologic technics and receive the benefits from the use of epidemiologic principles. Anyone can be an epidemiologist who recognizes that many factors play a part in the production of a disease or an epidemic and is willing to fit his own skills and training into a scheme that seeks to detect the various causative factors and to evaluate the relative significance of each of them. It should be added, however, that a broad background and training in the biologic sciences make one more appreciative of the contribution that each science is able to make to the epidemiology of diseases of man. Also, as one becomes more familiar with the intricacies of even the simplest diseases, the more readily will one realize the need for the vast resources of knowledge and experience to be found only in a wide variety of scientific fields.

The experienced epidemiologist is able to see the problems presented by an outbreak of a disease and know where and how to obtain the help he needs. Many scientific organizations and official agencies can render assistance when properly approached. Such assistance will be of value only when it is possible to determine exactly what the problems are and to select the kind of aid needed to solve them. An extensive epidemiologic approach is often not feasible where problems are of insufficient magnitude and seriousness to justify the establishment of expensive facilities. As a consequence, much of the epidemiology carried on today is limited in character. This does not mean that it is of no importance. Most of what is known about the epidemiology of diseases is the accumulation of bits of knowledge over the years and has resulted from information contributed by numerous interested observers from their own limited experience.

It is of great practical importance that epidemiologic principles and methods are not tools reserved only for specialists but may be utilized satisfactorily by anyone who recognizes that disease is a manifestation of a series of natural biologic processes. Sometimes the relationship between cause and effect is rather clearly seen as when all the guests of a church supper come down with food poisoning because everyone has eaten some of the contaminated custard pies. On the other hand, the detection of this relationship between cause and effect has been known to defy the combined assault of unlimited financial resources and the most intense endeavors of highly trained scientists—for example, poliomyelitis—a disease whose epidemiology is still full of unsolved problems.

Rural epidemiology offers unusual opportunities for the study and understanding of disease. William Budd[1] whose work on typhoid fever remains one of the classics in epidemiology, noted that " . . . where the question at issue is the propagation of diseases by human intercourse, rural districts, where the population is thin and the lines of intercourse are few and easily traced, offer opportunities for its settlement which are not met within the crowded haunts of large towns." Panum[2], the physician who made scientific history by his precise records and fascinating report of the measles epidemic in the Faroe Islands where the disease had been absent for approximately 65 years, also recognized the advantages of carrying on investigations in rural communities. He observed that, "The isolated situation of the villages and their limited intercourse with each other made it possible in most cases to ascertain where and when the person who fell ill had been exposed to infection . . . " William N. Pickles[3] has written a delightful little volume of 110 pages, entitled "Epidemiology in Country Practice." The author, a country physician practicing in a rural community with a population of approximately 3,000 people, emphasizes the advantages for studying cases and epidemics in rural areas and gives examples from his own practice to illustrate the unique opportunities for observing the natural history of disease.

Basic factors most commonly concerned with the genesis of disease are the susceptible host, the environment, and the parasite. In recent years, greater attention is being given to the role played by the host in the genesis of diseases of man. One of the important reasons why the host factor is receiving more consideration arises from the fact that infection with the same etiological agent in different hosts often results in a variety of responses. For example, infection of the members of one family with the same strain of hemolytic streptococcus may result in scarlet fever in a child, sore throat without a rash in a young adult, and infection without any clinical manifestation in another member of the family. For years Aycock has stressed the significance of the host factor and its influence upon the epidemiology of poliomyelitis—a disease in which many are infected but very few stricken. Aycock observed that those who were crippled by poliomyelitis had by far a larger proportion of blood relatives who were also crippled by poliomyelitis than did people who were not crippled by the disease. Not only is the genetic background of host important but the age of host seems to have an influence on the type of reaction that occurs between the host and the parasite. The age distribution of patients with the various types of encephalitis is rather striking. In the two recognized outbreaks of eastern equine encephalomyelitis, children were attacked most frequently; in Japanese B encephalitis, adults make up the greater proportion of cases.

These differences in response of the host to infection are explained by some in terms of the infecting agent—that is, are ascribed to variation in dose or virulence of the organism. Such explanations cannot be entirely discounted, yet, in the absence of more substantiation than has been offered to date, they can hardly be accepted to the exclusion of other factors.

Much has been learned in the experimental laboratory about the influence of the host upon biologic reaction. Webster and others who have studied the history of outbreaks of disease in mice colonies have added much to our knowledge of the host factor in the rise and fall of epidemics. Breeds of mice have been developed which are highly resistant to an infectious agent, while other breeds are highly susceptible to the same agent. In man, certain families seem particularly susceptible to some ailment, whereas other families seem to be resistant. Pickles[4], in describing one of the families in his community, observed that 23 of 53 descendents of a man who had died of rheumatic heart disease have had rheumatic fever of definite signs of mitral stenosis.

Persons who are in health work in rural areas and who, in the course of their normal activities have entree to most of the households in a locality, have an unusual opportunity to observe and keep records about many of the people who become ill. Anyone who is familiar with the activities and social customs of the sick person has an excellent opportunity to study the host factor in the epidemiology of a disease. Age, sex, race and occupation are the characteristics of the host which are frequently of epidemiologic significance. The previous health record of the patient, length of residence in the locality, relationship, blood, social and business, to other members of the community, dietary habits, nutritional status, severity of illness, and family history of the illness are some of the other attributes relative to the host that may be of importance.

Even though the number of cases of a disease which occur in rural communities is small, this is not necessarily a handicap to the study of the epidemiology. Often there is more difficulty in investigating the epidemiology of a disease when cases are numerous. When an epidemic exists, there are usually so many factors to be considered that there may be little chance or opportunity for concentrating on those which are relevant and significant. When the outbreak is small, the characteristics and attributes of individuals showing clinical manifestations of a disease can be more carefully studied. Moreover, the worker in a rural community, due to his knowledge of the people in the locality, has an opportunity of noting the differences between individuals and households with and without disease.

Recently, much attention has been directed to a great group of diseases affecting man in which animals or birds are the usual source of infection. A number of these diseases are transmitted by insect vectors. The list of conditions which man may acquire through association with animals, animal products or birds is quite remarkable from the standpoint of both number and importance. In a recent article, K. F. Meyer[5] noted that there were 75 different diseases which were transmitted to man from animal sources. Some of the more important diseases included in this group are undulant fever, tularemia, typhus fever, the encephalitides, rabies, Rock Mountain spotted fever, trichinosis, salmonella infections and leptospirosis. Recent investigations indicate that Q fever and Newcastle disease may be included in this category. Domesticated animals which serve as a source of infection for this group of diseases include the horse, cow, goat, sheep, pig, dog, cat, chicken, duck and turkey; wild animals incriminated are the rabbit, fox, squirrel, rat, quail, pheasant and other game animals and birds. Insect vectors of some of these diseases include various species of mosquitoes, ticks, and possibly other insects such as mites, etc. (One may begin to wonder how anyone living in the country manages to escape all of these diseases in which the common farm animal and fowl may be a reservoir of infection is of special importance to rural communities. Also, this extensive reservoir of infections in animals—both domesticated and wild—presents a challenge to anyone working in rural and agricultural districts.

Much is known about these diseases and everyone working in rural areas should make every effort to be fully informed about their epidemiology. Such knowledge may be of particular value in the diagnosis of diseases such as the encephalitides or undulant fever in which it is often difficult to make a diagnosis upon information obtained from the clinical history, physical examination and ordinary laboratory aids. Certainly, undulant fever is a likely diagnosis when an illness characterized by fever, sweats, chills, and joint aches and pains develops in a farmer who has been having trouble with Bang's disease in his herd of cows. Similarly, tularemia should be strongly suspected in a farmer's wife who develops a sudden illness a few days after dressing a rabbit. In the recent epidemic of eastern equine encephalomyelitis in Louisiana, a presumptive diagnosis of this disease depended greatly upon epidemiologic grounds, namely, that a wide-spread epidemic of the disease was occurring in horses in the area where the patients lived.

Epidemiologic knowledge may cause one to suspect the presence of certain disease and thereby the guide as to what phase of the history of the illness should be more fully developed, what aspects of the physical examination should be checked carefully, and which laboratory examination is likely to be the most useful in establishing a diagnosis. Whenever the diagnosis has been established for any of the diseases, appropriate preventive measures will be determined by the current understanding of the epidemiology of the disease in question. Curiously enough, the acute case of many of these diseases in man rarely gives rise to secondary cases. On the other hand, the reservoir of infection is so wide-spread in the animal kingdom that, with few exceptions, control measures directed at the source of infection have little hope for success.

While much is known about the epidemiology of this particular group of diseases, our knowledge is by no means complete, and for some of these diseases it is embarrassingly meager. There are many opportunities for workers in rural districts to obtain additional information once they are aware of the relationship between the association of man with the animal kingdom and the appearance of certain illnesses. One of the greatest triumphs of medicine had its origin in an observation of the inhabitants of rural districts in England where for years a relationship had been noted between disease in cows and disease in man. This observation came to the attention of Edward Jenner by way of a milk maid who informed him that she could not get smallpox because she had had cowpox. Only recently a very puzzling epidemiologic problem was solved by workers in Calcutta who discovered that sandflies, which had been strongly suspected as being vectors of leishmaniasis, were unable to transmit the infection unless sugar was added to their diet at the proper time. This discovery explained the ability of sandflies to transmit the disease in nature where they were able to obtain the essential constituents of their diet, and the failure of sandflies to transmit the infection in the laboratory where the diet of the insect had not been properly planned. From these examples, it should be obvious that seemingly insignificant details and circumstances may play a vital role in the epidemiology of diseases in man in which the source of infection is in the animal kingdom.

There is a tendency, at times, to exaggerate the role of the parasite when the subject of epidemiologic studies to laboratories equipped with microscopes, test tubes, sterilizers, and well stocked with culture media and experimental animals. It should be clear, however, that such studies suffer from the serious handicap of being conducted under selected circumstances in a specially created artificial environment which is not necessarily comparable to the situation observed in the field. It is to be remembered that epidemiology is concerned with the natural biologic processes which occur in nature. Laboratory workers, particularly those studying epidemics in colonies of experimental animals, are among the first to appreciate the unnatural conditions and circumstances of a laboratory environment which may greatly limit the significance and interpretation of their observations.

It is not intended to belittle the research laboratories in epidemiologic studies but rather to emphasize the advantages and opportunities for investigation by physicians and other public health workers in rural and semi-rural areas. Their laboratory is the community; instead of focusing their attention on microbes, they have under observation people, as important a factor in the genesis of disease as the parasite; their investigations are not handicapped by the effect of an artificial environment and, while the parasite itself is not visible to the unaided eye, the sources of infection which harbor the parasite, such as some ordinary animal or common bird or fowl, are readily subject to investigation along many lines.

There are, no doubt, many physicians in rural areas, some connected with local health departments and others in general practice, who, from their own experience, might add to our knowledge of epidemiology but hesitate to make their observations known because they are so few in number. A few observations may not be of great value by themselves, but if similar observations have been made by others, even though on a small scale, the sum of these findings may be of great value and may establish beyond doubt some epidemiologic fact. For example, if accurate records were available on the morbidity and mortality of all the twins born in Mississippi since 1938, information about this large number of twins would be interesting and valuable.

Finally, I would like to point out that epidemiology is not ordinarily a specialized activity in a local health department, but should be a component part of most of the services and activities of all health department personnel. It is not a field limited to specialists but should engage the interest of all practicing physicians. In the prevention of disease and the promotion of health, an understanding of the basic causes of disease and ill health—the goal of epidemiology—is most essential.

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FROM THE NATIONAL PRESIDENT

This is a personal appeal to every Auxiliary member to mobilize without delay every member and every doctor's wife in your state. We must join with the great medical profession and the hundreds of thousands of other thinking Americans to tell the truth about medical care in our country. Today—NOW—we women have a vitally important part in convincing the public that a politically manipulated system of medical care has no place in American life.

Within the next sixty to ninety days a bill for compulsory health insurance may come to vote and decisive action in Congress. The director of the National Education Campaign of the

American Medical Association are developing a detailed and comprehensive national plan of campaign in which the state and county auxiliaries will be asked to play a vital part.

The immediate objective is the defeat of the compulsory health insurance bill in Congress; and the long range objective is the expansion and development of voluntary health insurance. Our work toward achieving these goals will include: securing endorsements, particularly from women's organizations; distribution of literature; securing and filling speaking engagements and publicity development.

STAND BY FOR ACTION!

Very sincerely,

Mrs. Luther H. Kice, President
95 Brook Street
Garden City, Long Island, N. Y.

OUR BUSY PRESIDENT

The president of the Woman's Auxiliary has been busy but has failed to report any of the activities, so we are bringing you up to date with what has been happening since the State Convention.

Mrs. Avent, our state president, has visited five auxiliaries since May. The first was Vicksburg, where she reports she enjoyed the lovely annual luncheon given in honor of the Central Medical Auxiliary of Jackson. Vicksburg is well organiezd and is doing a fine job of extending the aims of the medical profession to the public. Mrs. Augustus Street, president-elect, hails from Vicksburg and you may expect a very efficient administration when she takes over the reins in May in Biloxi.

The next official visit was made in Columbus. Mrs. Avent was accompanied on this trip by Mrs. Street and Mrs. Lawrence Clark. The Columbus auxiliary was organized by Mrs. Clark during her presidency. They found a group of very busy women, doing a job well. Again Mrs. Avent was joined by Mrs. Street in Jackson where they were guests at a beautiful luncheon given in their honor, in the home of Mrs. Carter O'Ferrall, president of the Central Medical Auxiliary, later joining the large group of members for an afternoon program. Jackson has over a hundred members, many of whom serve as state officers.

In October the annual board meeting was held in Grenada with three out of the five members of the advisory council present—Dr. R. B. Caldwell, Dr. Stanley Hill, and Dr. S. B. McIlwain. This proved to be one of the most beneficial board meetings ever held. Many plans were made. Two of the most important actions taken were to set up a nurse recruitment program and to sponsor the essay contest. Mrs. Edgar Giles is chairman of Nurse Recruitment, while Mrs. Walton Lipscomb is chairman of the Essay Contest. The following officers answered roll call: Mesdames J. K. Avent, A. Street, S. B. McIlwain, Stanley Hill, V. B. Philpot, Harvey Garrison, Walton Lipscomb, H. C. Ricks, George Riley, Carter O'Ferrall, D. H. Griffin, George Furr, John B. Howell, Sr., John B. Howell, Jr., A. T. Nadeau, A. E. Brown, Wm. J. Slaughter, M. Q. Ewing, H. K. Curry, and Edgar Giles.

Then Grenada doctors and their wives were luncheon guests. Dr. D. S. Pankratz, dean of medicine, University of Mississippi, was present for lunch and talked on the nursing program at Ole Miss. Mrs. R. B. Caldwell, wife of our state president, also was a luncheon guest.

In November Mrs. Avent and Mrs. Street attended the convention of the Woman's Auxiliary to the American Medical Association in Chicago where they received much inspiration and information from national officers.

January started a very busy schedule beginning with a visit to the Coast Counties Medical Auxiliary which met at the Buena Vista Hotel in Biloxi with the Biloxi unit entertaining with a luncheon. As always the Biloxi ladies were on their toes and made this one of the most outstanding meetings. The luncheon table was a veritable garden of camellias growing from a beautiful fountain on the speaker's table. Mrs. Street and Mrs. Avent addressed the group.

Meridian came next on the busy schedule. The president and president-elect met in Jackson and drove over together, arriving at the appointed luncheon hour. A very enthusiastic group was there to greet them and after luncheon mimeographed copies of a paper on socialized medicine were given out to the members to be used in their public relations' work. Mrs. William Slaughter is councilor in that district and is doing a fine job. Mrs. Paul Parker is president and Mrs. Albert Bryan, who is Public Relations chairman, is working on the Essay Contest through the Meridian schools.

The next trip made by Mrs. Avent and Mrs. Street covered more than five hundred miles in a day, beginning at four in the morning and ending safely, in spite of rain every mile of the way, at ten o'clock in the evening. However, these traveling saleswomen were amply repaid for their efforts, for at the conclusion of the day they had sold twenty-six doctors' wives the idea of organizing auxiliaries. Natchez was first on the itinerary, where Mrs. W. K. Stowers, a past state president, had arranged a meeting in her home with twenty-three doctors' wives gathered together for an eleven o'clock coffee hour. This was your president-elect's meeting and she gave an interesting talk and assisted Mrs. Stowers in re-organizing the Adams County Auxiliary. Mrs. Stowers invited the ladies to the beautiful new country club where she was hostess at a lovely luncheon after which officers were elected for the newly organized auxiliary.

Mrs. Avent and Mrs. Street left Natchez immediately after lunch and drove to McComb for a four o'clock meeting in the home of Mrs. V. S. Holmes. A new auxiliary was organized there with eight members.

Mrs. Avent has addressed four lay groups on socialized medicine. The Woman's Study Club of Goodman, the Kiwanis Club of Grenada, the Mississippi Women's Cabinet of Public Affairs composed of forty presidents of state clubs, and the Junior Auxiliary of Grenada.

Two visits to auxiliaries are now scheduled. One for the Central Auxiliary in Jackson for March 1, and one for the Tri-Counties at Brookhaven.

Mimeographed copies of Mrs. Avent's paper on socialized medicine are available upon request.

Watch for more auxiliary news in April.

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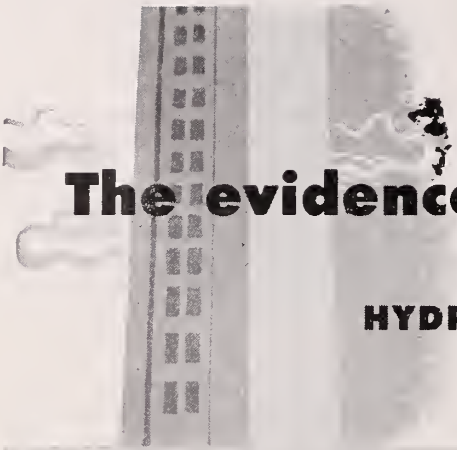

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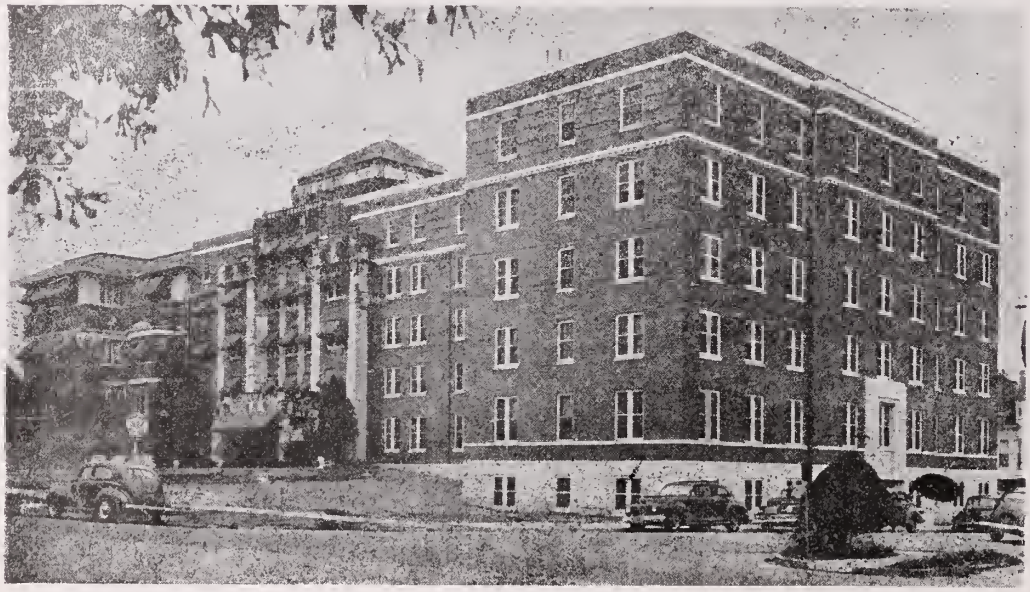

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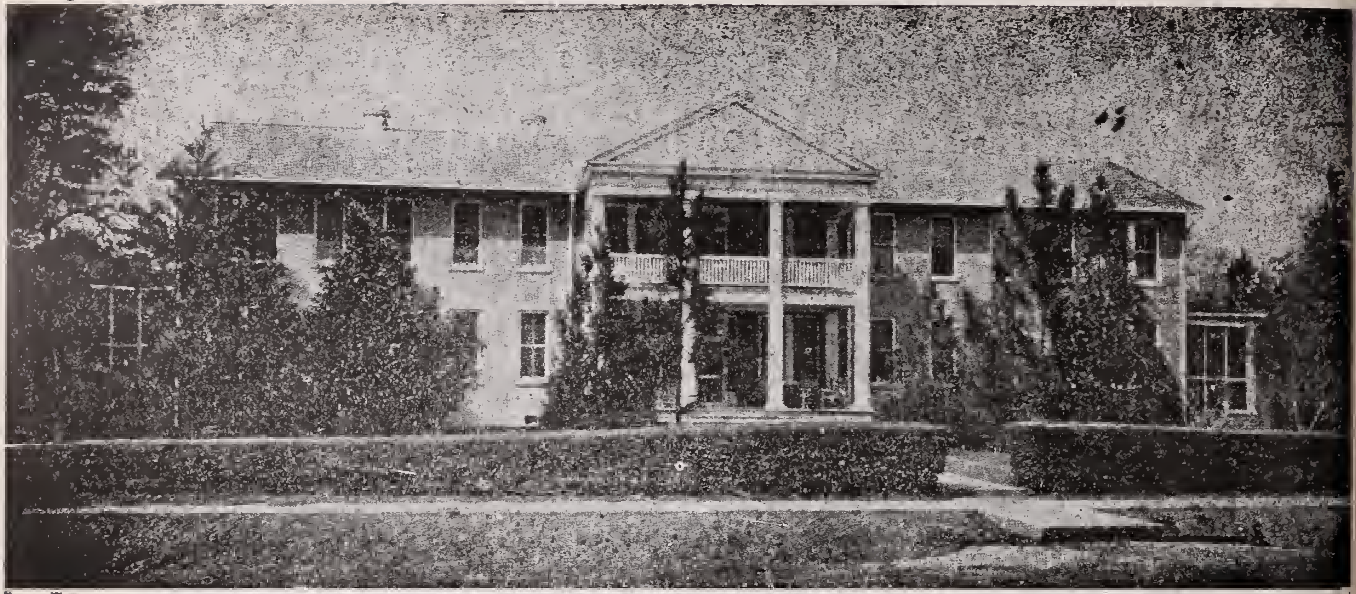

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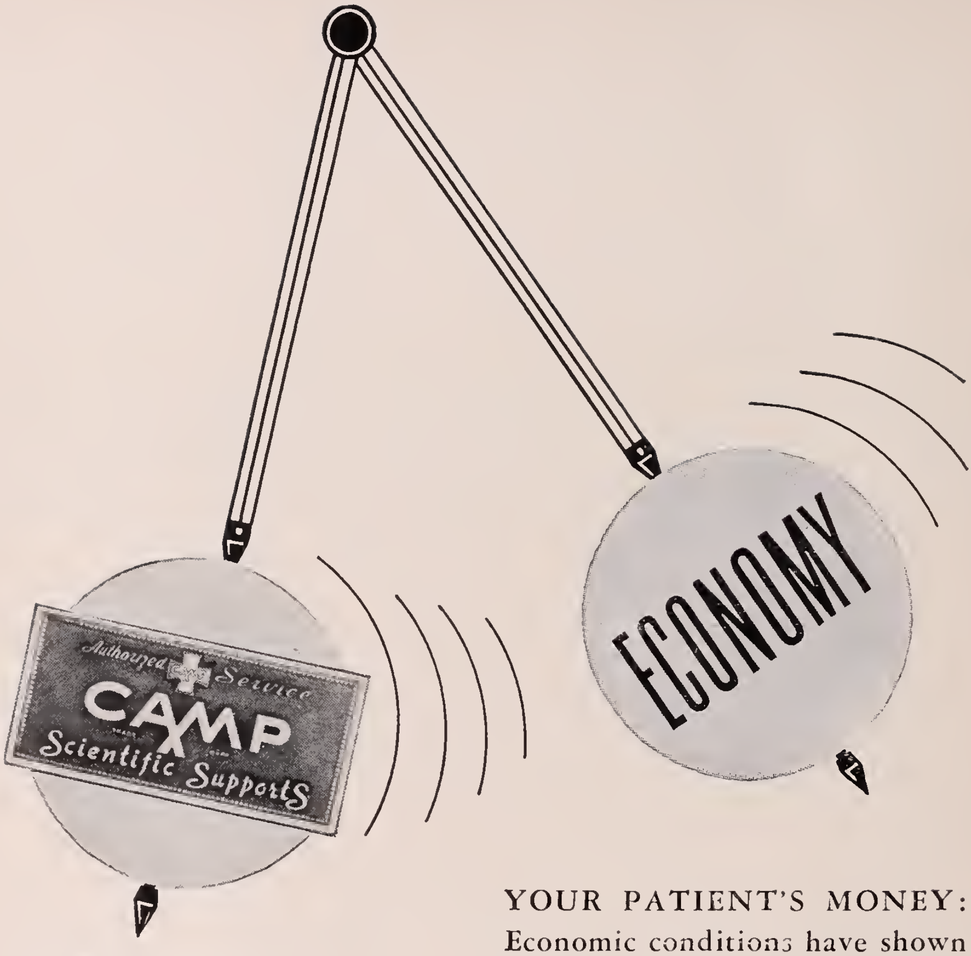

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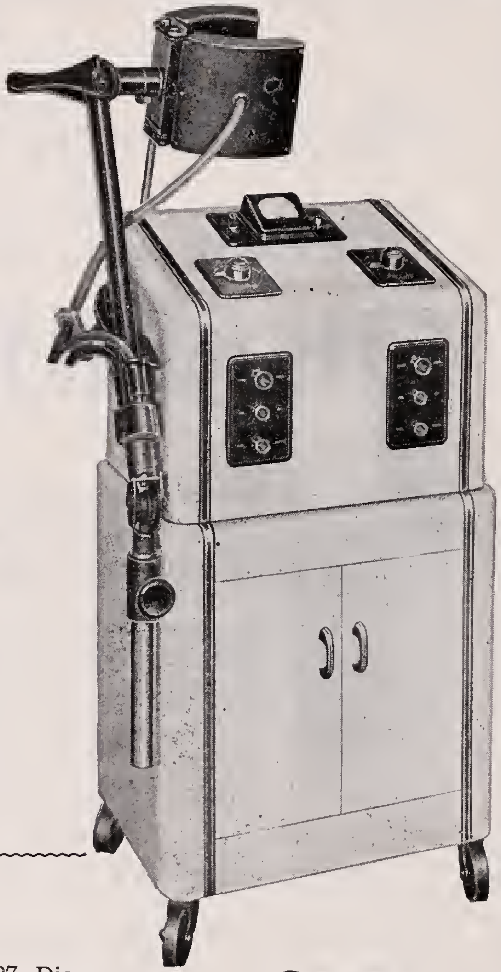

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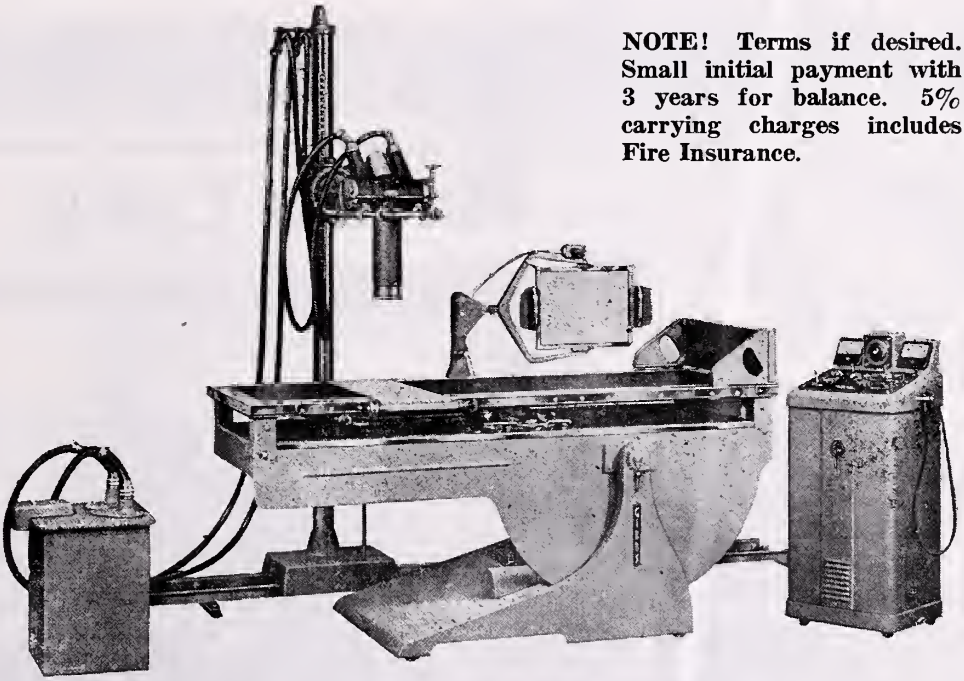

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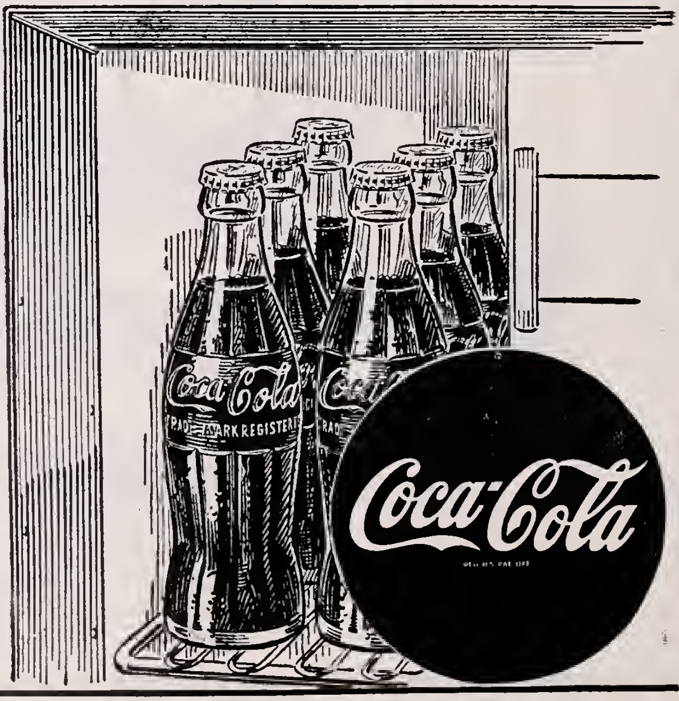
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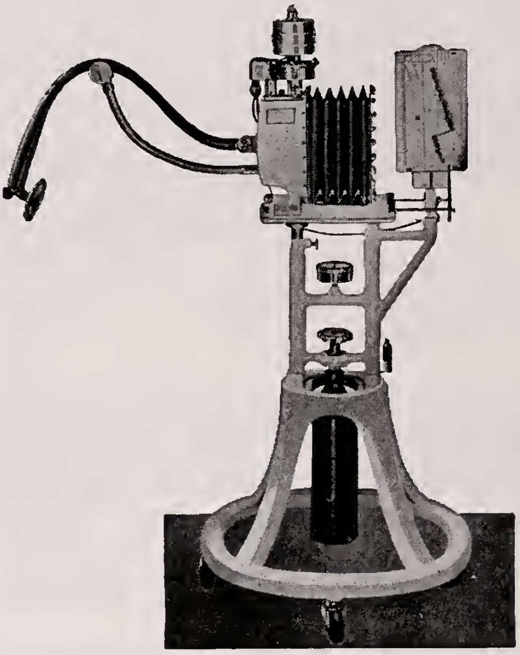

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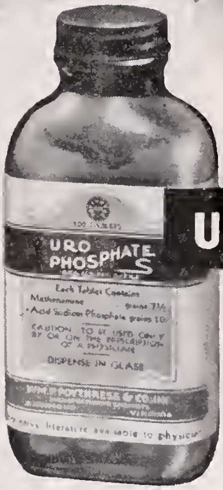
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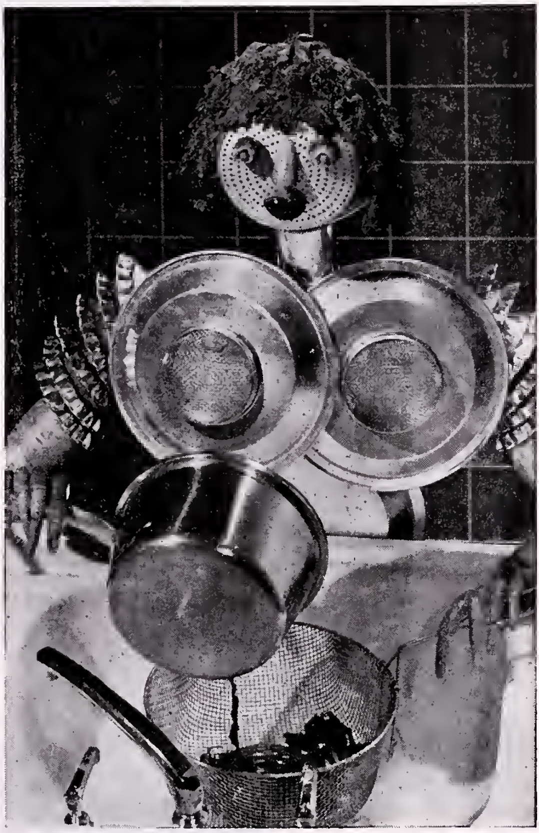

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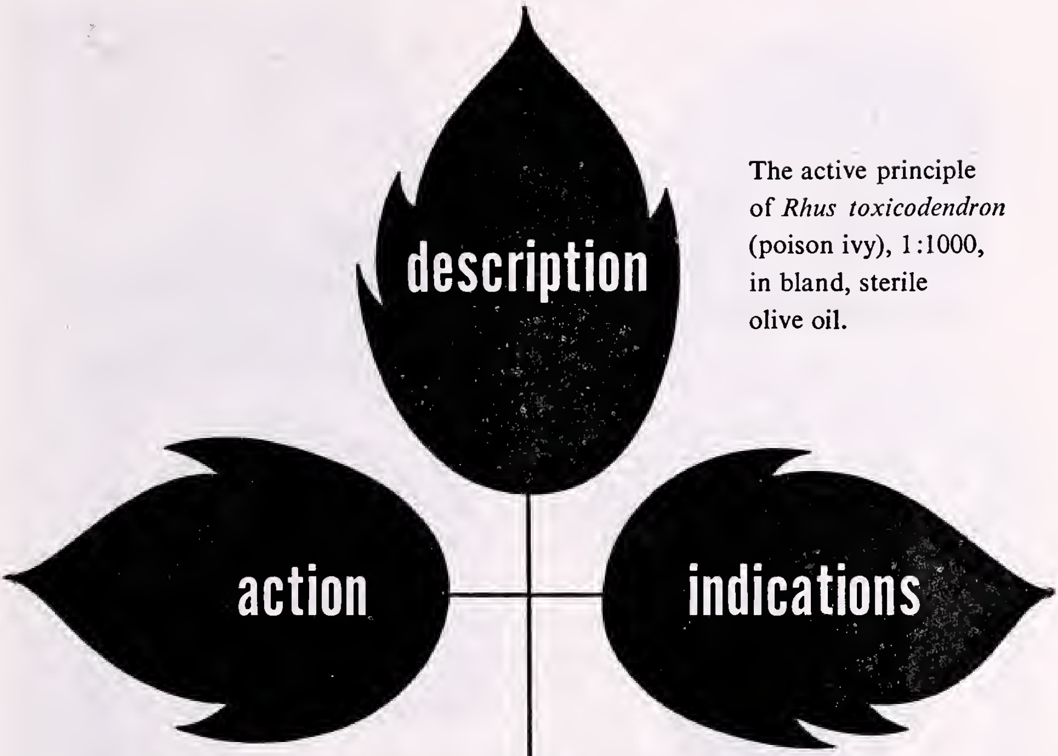

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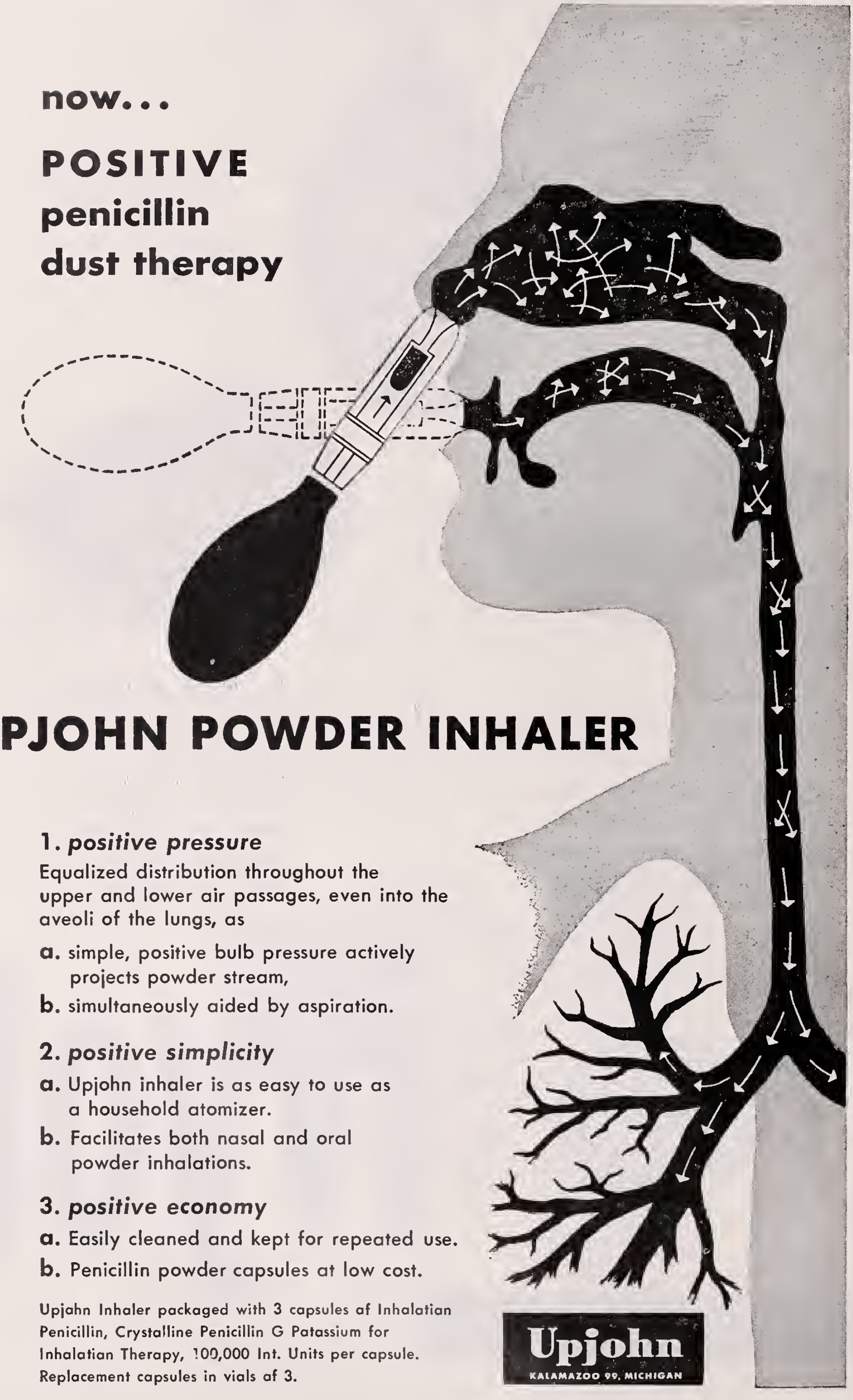

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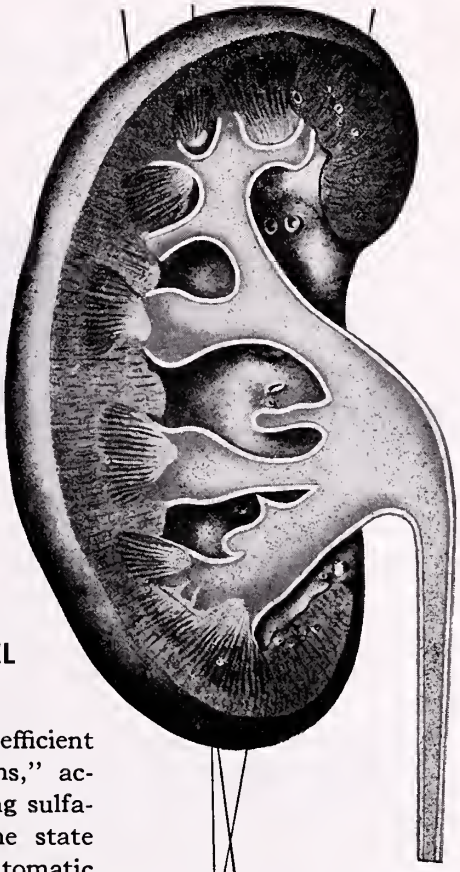

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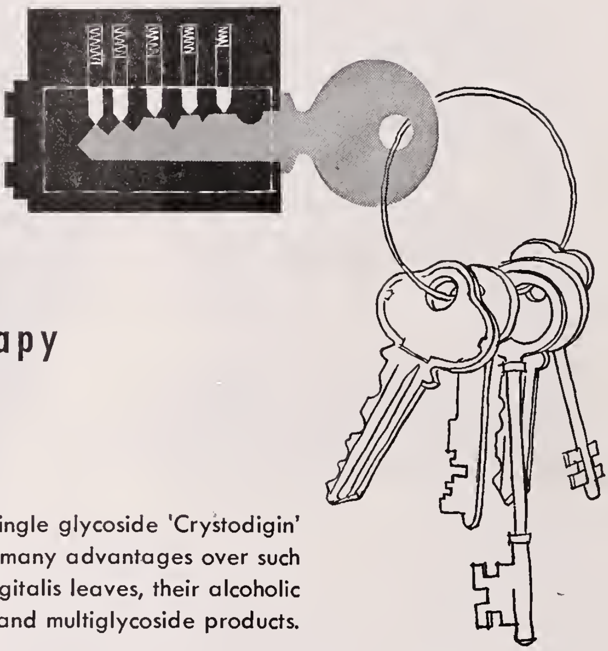

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The Surgical Management of the Common Motor Anomalies*

WILLIAM B. CLARK, M.D.†
New Orleans, La.

I CAN not begin any paper on this subject without paying tribute to the teachings of the late Dr. James Watson White, who, in my humble opinion, was one of the greatest teachers of motor anomalies that has ever lived. It was from him I got my interest, and certainly the initial part of my training, in ocular muscles.

"The detective story addict," wrote Scobee[1] in the preface to his book entitled **The Oculorotary Muscles,** "enjoys nothing more than to follow his favorite sleuth through a maze of apparently inconsequential and often confusing clues to the inevitable solution of a mystery. Of such clues there are usually plenty, all pointing the way for those keen enough to see the solution. The average patient with some anomaly or dysfunction of the oculorotary muscles has much in common with a good detective story. There are usually plenty of clues pointing the way toward the offending muscle or muscles and, fortunately for most of us, one need not be a Sherlock Holmes or a Hercule Poirot to follow them to a logical and correct solution. Our fiction detective looks for cause and effect; the successful muscle sleuth must do likewise.

"The detective usually draws a map of the scene of the crime; the muscle sleuth will do well to map carefully the oculorotary muscles and their anatomic relations. The detective studies carefully the behavior and character of each individual in the case; the muscle sleuth must do likewise for each muscle. The clever detective will strive to learn why people behave as they do under certain conditions; the successful muscle sleuth will know as much as he can about the varying innervations of the oculorotary muscles in varying circumstances. The average mystery, in retrospect, is ridiculously simple and really no mystery at all; the average muscle case, once it has been correctly diagnosed, is equally clear and simple."

I am not so sure as is Scobee that when once the correct diagnosis is made in the average muscle anomaly, everything forthwith becomes clear and simple. With that single exception, however, I believe that his somewhat unscientific remarks furnish as good a guide as one might hope to find to the management of the average case. We go wrong in our therapeutics, in fact, because we have been careless in the steps that lead up to that phase of management. Perhaps the most important implication of Scobee's analogy, however, is the fact that one decides each case on its own individual merits. Certain general principles govern the therapy of anomalies of the ocular muscles, but the ironclad application of even of the best of principles in all cases is conducive to poor, not to good, results.

I must add, before proceeding further, that although Duane's retraction syndrome and strabismus fixus are not included in my discussion, they must always be borne in mind in the management of motor anomalies. They exist much more frequently than the average textbook would lead one to believe, If other surgery is attempted on the muscles of patients who present these conditions, it is sure to fail, and worse, it is sure to complicate any other procedure which might be attempted to correct the defect.

I must also explain that the slides which I shall show you to illustrate certain points of technique are derived from a combination of sources. I think you will find helpful, though I do not want to claim the smallest credit for them, that some of the practices which I shall show you I have evolved in the course of my own experience. The methods I shall illustrate, however, represent combinations of many methods, and I shall not try to distribute the credit for either their origin or their evolution.

General Principles of Management

The nonsurgical phases of the management of motor anomalies of the ocular muscles have been considered by the essayist who has preceded me, and I shall spend no time on them except to emphasize that surgery is the last resort, not the first resort, in these cases. Operation is not needed in many cases, but when it is required, it must be preceded by a period of examination and testing, and of reflection upon the data secured by these investigations. A single test and a single examination may warrant a diagnosis but they are not the basis for rational treatment. This is particularly true of vertical deviations. Vertical deviations present many more difficulties in diagnosis that do horizontal anomalies, and often the most delicate judgment is necessary to select the muscle upon which operation is to be performed and to decide what and how much to do.

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*Read before the Section on Eye, Ear, Nose and Throat at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

†From the Department of Ophthalmology, Tulane University of Louisiana School of Medicine.

Before operation for any motor anomaly one should have estimated the lateral and vertical deviations in diopters based on the cover test. These findings should be translated into millimeters indicating the amount of tissue to be recessed or resected. These and other details should be carefully worked out before operation is performed. And then one should be fully prepared to change one's mind at operation, depending upon the state of the muscle to be resected or recessed. The most careful calculations cannot be applied literally to a muscle that is thin, lifeless and attenuated or to one that is unduly thick, tough and resistant.

As Scobee[1] points out in the preface to which I have already referred, the concept of the surgical therapy of paralytic heteroptropia has recently undergone a change. For many years, the dominating concept was that of strengthening the paretic muscle. Then, some 10 years ago, White and Chavasse advanced the principle of managing such cases by the sound orthopedic principle of correcting the difficulty by weakening the antagonist of the affected muscle. When this is accomplished, by recession of the antagonist, the formerly paretic muscle is permitted more freedom of action and begins to regain some of its lost tonus.

Sutures in muscle operations for correction of motor anomalies have also been greatly simplified. Silk and nylon have been largely discarded in favor of catgut, chromicized for buried sutures and plain for closures. With this type of material the removal of sutures is no longer necessary, and I need not remind you that this is a major advantage, since the removal of nonabsorbable sutures often necessitates a second anesthetic.

Sutures have also become far simpler. The ophthalmologic surgeon no longer attempts always to hook up the conjunctiva, the muscle tendon and Tenon's capsule in a single suture which is intended to serve as a closing suture while at the same time it corrects the anomaly. Closure is now accomplished in tiers, exactly as in abdominal surgery, with the objective of restoring the original anatomy. Finally, complicated knots are no longer employed. As these various difficult and unnatural methods have been discarded, healing has become correspondingly smoother and more rapid, and separation of the tissues, sloughing and infection have been practically eliminated.

No matter what type of operation is performed, the tissues must be handled with the greatest care and delicacy. Every precaution should be taken not to injure the sclera or the fascial undersurface of the muscle. The wound should be completely dry before closure.

Anesthesia furnishes no difficulties. Generally speaking, ether should be used in young children, to the age of twelve years or thereabouts. After that age, if there are no contraindications, pentothal anesthesia by the intravenous route is very satisfactory, though after the age of fifteen or sixteen years central tenotomies and operations for phorias can be done under local analgesia.

Preoperative preparation follows the usual eye routine.

Many ophthalmologists follow the plan of having in plain view in the operating room the complete graphic chart of the patient undergoing surgery for the correction of motor anomalies. The advantages of this simple precaution are obvious, and it may prevent an irreparable mistake.

One final point should be mentioned under the heading of general principles: The correction of motor anomalies of the eye muscles must usually be carried out in stages. It is a mistake to promise a parent or a patient that a single operation will be all that is necessary. It is often possible, it is true, to correct the deviations in two or more muscles at a single sitting, but frequently this is neither practical nor safe. It is impossible, however, to settle this point until operation, and often until operation has been in process for some minutes. For this reason it should be made clear to the parent or to the patient that the correction of motor anomalies is usually carried out in stages, the second stage being deferred until the full effect of the first stage is apparent.

Common Motor Anomalies of the Ocular Muscles

There is not complete agreement as to the incidence of the various motor anomalies and reported series are sometimes at considerable variance with each other. There would be rather general agreement, however, that these anomalies most frequently affect the medial and lateral recti muscles and take the form of convergence excesses and insufficiencies, divergence excesses and insufficiencies, and various pareses.

Anomalies of the Horizontal Muscles

Common anomalies of the horizontal muscles include convergence excess, divergence insufficiency, divergence excess, convergence insufficiency and abducens paralysis. In the correction of the excesses and insufficiencies, the surgeon has a two-fold goal, fusion, and a good cosmetic result. These objectives are not incompatible. When adequate fusion is obtained, there is almost invariably a good cosmetic result. The reverse, however, is not necessarily true. It is possible to achieve a good cosmetic result without at the same time achieving fusion.

Accomplishment of Fusion. In order to achieve fusion, three considerations govern the method of treatment: Visual acuity, and, if it is reduced, whether it can be corrected by lenses; the near point of convergence (PCB); and the fixing eye.

1. The correction of convergence excess depends upon where or not an accommodative factor is present. If this factor is absent, and if the near point of convergence is unlimited, a generous bilateral recession of the medial recti, which should not, however, exceed 5 mm., may be done. If the PCB is remote (90-120 mm.), then the medial recti should be handled with great care.

If the accommodative factor is present, recession of the medial recti should be less liberal than when it is absent. Otherwise, while a perfect correction may be obtained without glasses, when they are worn it is quite possible that convergence excess may have been altered to divergence excess or to convergence insufficiency, as the result of the relaxation of that part of convergence which comes with excessive accommodation.

If the patient must wear glasses at all times in order to see efficiently, then the aim should be to correct the defect only to the point at which there is no residual esotropia when the glasses are worn. A limited correction of this sort may leave the patient with a residual of as much as 20 degrees of esotropia without glasses, but, except to extremely fastidious patients and parents, this amount of residual esotropia is not objectionable because in almost every instance the initial degree of squint is many times as great.

2. In divergence insufficiency the near point of convergence is usually near normal or remote. The medial recti are therefore to be avoided. Correction is carried out on the same principles as the correction of convergence excess. If normal fusion is being sought, then both lateral recti should be strengthened by an operation that shortens them in equal amounts. Here again, the accommodative factor must be taken into consideration: A too generous bilateral resection can convert a divergence insufficiency into a divergence excess if the patient wears strong plus lenses.

3. In divergence excess the near point of convergence is usually remote but may be almost normal. In its incipiency it may not be manifest until the eyes are screened or until the patient is fatigued or is under emotional stress, the overactive lateral recti assert themselves and the eyes turn out. The first stage of surgery here must therefore be bilateral recession of the lateral recti.

If the near point of convergence is well held, it is best to be cautious in the recession of the lateral recti. It is entirely possible, if the recession is too generous, to change a divergence excess into a convergence excess with an embarrassing internal squint.

If the near point of convergence is remote and the bilateral recession is to strengthen the weaker of the two medial recti by a shortening operation, occasionally it may be necessary to strengthen both medial recti because it sometimes happens that a divergence excess is superimposed on an earlier convergence insufficiency.

4. In convergence insufficiency the near point of convergence is always remote. The surgical procedure should be directed toward strengthening the weak medial recti by some one of the shortening operations. If this is not sufficient to correct the defect, it may be necessary to carry out a modest weakening operation on the direct antagonist of the medial

recti, (that is, the lateral recti) at the next stage.

Accomplishment of a Cosmetic Result. If only a cosmetic result is desired, and if the patient objects to an operation on the better eye, the surgical procedure may be confined to the non-fixing eye, which is usually amblyopic. In convergence excess, a generous recession of the medial rectus may be combined with generous resection of the lateral rectus at the same sitting. In divergence excess, the cosmetic result would be accomplished by an exactly opposite procedure, that is, generous lengthening of the lateral rectus, with shortening of the medial rectus. It is not usually necessary to consider convergence and divergence insufficiencies from the standpoint of cosmetic results.

In these procedures the status of the muscle must be considered in the operation that is done. If a weak, lifeless rectus is associated with a strong medial rectus, a more generous recession than resection is required. On the other hand, if both muscles are fairly normal, the recession is less generous and the resection more generous, because more correction can be expected from strengthening a normal muscle than from strengthening a weak, attenuated muscle.

Before any decisive step is taken, it is a wise precaution to expose the opposing muscles (the medial and lateral recti) before determining definitely the amount of strengthening or weakening that should be done.

Abducens Paralysis—There is considerable disagreement as to what procedure should be followed in instances of abducens paralysis. Many surgeons are of the opinion that a recession to the equator of the medial rectus, with very generally resection of the lateral rectus, will produce as good position as will transplantation of the nasal halves of the superior and inferior recti in combination with recession of the medial rectus. Both procedures are apt to fail if the surgeon does not remember his physiology and does not weaken by recession the contralateral medial rectus, which is the yoke muscle of the paretic lateral rectus. I prefer the recession-resection procedure. My results have been as good as with the transplantation operation, and the technique is much simpler.

Anomalies of the Vertical Muscles

A good rule to follow in correcting anomalies of the vertical muscles, when the vertical anomaly is combined with horizontal deviation, is to correct the more marked deviation at the first stage of surgery. If the vertical defect is greater than the horizontal, the first attack would be on the vertical muscles. If the horizontal defect were greater, it would be attacked first.

The same rule holds for the second stage: If the first operation has corrected the dominating defect to such a degree that it is now less than the minor defect, then the second stage operation is directed primarily against the lesser defect. It is sometimes possible to perform combined correction at a single sitting.

Paresis of the Superior Rectus — Probably the most common vertical defect is paresis of the superior rectus, with overaction of the yoke muscle, that is, the inferior oblique of the opposite eye. Selection of the surgical procedure to correct this defect depends largely upon whether or not the patient fixes with the paretic eye. If he fixes with the non-paretic eye, the defect is a primary deviation and can be corrected by strengthening the paretic muscle, and by a modest weakening of the direct antagonist (the inferior rectus of the same eye).

If the patient fixes with the paretic eye, then the first stage of the surgical procedure should be directed against the overacting yoke muscle, which is the inferior oblique of the opposite eye. The degree of deviation should determine whether a recession of the yoke muscle or complete tenotomy should be done. In most cases in which vertical deviation does not exceed 15 prism diopters in the primary position, a recesssion of the inferior oblique will suffice. If the deviation is greater than fifteen prism diopters in the primary position, complete tenotomy of the affected muscle, or myectomy, should be done, preferably at its origin. The best procedure under these circumstances is the White operation. If the desired correction has not been obtained by recession or by tenotomy of the yoke muscle, after a due period of waiting to observe results, the next stage of surgery can be directed toward strengthening the paretic superior rectus. This operation can be combined with a weakening operation on the direct antagonist (the inferior rectus on the same side).

In cases of bilateral superior rectus paresis, extreme care must be taken in weakening the yoke muscle of the fellow eye. The inferior oblique is an elevator muscle, and if both remaining elevators are weakened by surgery, the patient, as the result of crippling of these muscles, will end by having to tilt his head upward and backward to see.

Paresis of the Inferior Rectus—The next most common vertical defect is paresis of the inferior rectus. Theoretically it should be handled by the same principles as defects of the superior rectus. Actually, ophthalmic surgeons have been, for the most part, unwilling to correct this anomaly by operation on the yoke muscle (the superior oblique).

Berke[2], in 1946, presented at the meeting of the American Ophthalmological Society a preliminary report on Tenotomy (tenectomy), which he described as a "simple, effective and reliable" procedure for the cure of hypertropia associated with overaction of the superior oblique muscle. His presentation was so logical that it is worth discussing in detail, although my own experience with the operation is extremely limited.

The majority of ophthalmic surgeons, Berke notes, are agreed that tenotomy of the superior oblique muscle is not an indicated procedure, a point of view most ophthalmic surgeons held thirty or forty years ago concerning tenotomy of the inferior oblique muscle, which is now a generally accepted procedure. Because of the belief that tenotomy is a dangerous and undesirable procedure, treatment of overaction of the superior oblique muscle associated with paresis of the inferior rectus or inferior oblique muscle has been limited to three surgical procedures, shortening of the paretic inferior rectus, weakening of the homolateral superior rectus, or shortening of the paretic inferior oblique. For various reasons none of these procedures is entirely satisfactory. If the desired results are secured by them so far as the attacked muscles are concerned, other difficulties are frequently set up.

Berke advocates tenotomy of the superior oblique muscle for several reasons: 1. It does not widen the palpebral fissure or restrict upward rotation of the globe, as recession of the homolateral superior rectus muscle is likely to do if it is used in paresis of the homolateral inferior rectus muscle or of the contralateral inferior oblique muscle. 2. Tenotomy of the superior oblique is not a difficult procedure. In fact, it is simpler and easier technically than tenotomy, myectomy or recession of the inferior oblique muscle. It can be completed within 5 minutes. 3. It does not lend to torsional difficulties, changes in the width of the fissure, or complete paralysis of the superior oblique muscle. 4. It can be graded to meet the demands of each case with the same degree of accuracy and confidence as tenotomy of the inferior oblique muscle. 5. It is the procedure of choice in paresis of the contralateral inferior rectus muscle or in paresis of the homolateral inferior oblique muscle when overaction of the superior oblique muscle is a factor in hypertropia. 6. It leaves no visible scar because the incision is made through the conjunctiva under the upper lid.

The underlying reason for the use of tenotomy in preference to other procedures is that, when one has the choice, it is sounder surgical judgment to elect to weaken an overactive strong muscle, in order to make it balance with an abnormally weak muscle, than to attempt to strengthen the weak muscle to balance with the power of an overactive one.

Berke's experience with tenotomy (tenectomy), which had amounted to 20 operations in 13 cases at the time of this report, combined with his cadaveric studies, led him to formulate the following suggestions as to the extent of the tenotomy required: 1) for a deviation of 5 to 10 diopters, simple tenotomy is sufficient; 2) for a deviation of 10 to 20 diopters, 3 to 5 mm. of tendon should be removed; 3) for a deviation of 20 to 30 diopters, 5 to 8 mm. of the tendon should be excised, though he had himself never removed more than 7 mm. at one time; 4) if complete paralysis of the superior oblique seems required, part of the tendon and its sheath should be excised close to the pulley through a skin incision.

The Berke operation had been done, as noted, twenty times over the past nine years, on thirteen consecutive patients. In four of ten tenotomies, the results were unsatisfactory, presumably because the tendons were incompletely severed. In the last ten operations tenectomy was performed, with good results in all. In none of the thirteen patients was a discernible weakness of the superior oblique produced.

Hughes, who discussed Berke's report, had performed the operation in two cases, with good results in one and with too much effect in the other because, he believed, he had not been careful enough to perform the tenectomy close to the insertion of the muscle, a precaution which Berke stresses. In Hughes' opinion the operation is safer and more satisfactory than recession of the trochlea, which he had introduced himself in 1944.

Technical Considerations

Operation on the Horizontal Muscles—Emphasis in the management of motor anomalies of the ocular muscles is, very properly, placed upon diagnostic considerations. It also should be emphasized that even after the most accurate diagnosis, technical errors may invalidate the whole procedure. Either under-correction or over-correction may be disastrous. The following points of technique must therefore be borne in mind:

1. A recession operation is begun by picking up the conjunctiva (**only** the conjunctiva) with two conjunctiva forceps. A buttonhole incision is made between them with strabismus scissors.

2. A stay suture is inserted in the medical lip of the wound, in line with the caruncle, and is used not only as a marker but as a traction suture in dissecting the conjunctiva and placa semilunaris free from Tenon's capsule. Great care should be taken that the conjunctiva is completely freed from Tenon's capsule, so that the normal relationship can be properly restored when the wound is sutured at the end of the operation.

3. Tenon's capsule is buttonholed above and below the muscle tendon and the muscle hook is introduced under the tendon. The sheaths of Tenon's capsule which cover the muscle tendon are disturbed as little as possible in the manipulations. The check ligaments are carefully severed by lateral snips with the scissors.

4. The suture of choice is fine chromic catgut on double atraumatic needles. The suture is introduced through the tendon about 1.5 mm. from the scleral insertion. I personally prefer a lock stitch on a 1.5-mm. band at the upper and lower margins of the tendon, though this stitch is not essential. When the suture has been placed, the muscle is severed from the scleral insertion and the amount which it has been decided to recess is measured off on the scleral surface. The needles are introduced into the sclera for a depth of 1-1.5 mm., the needle points never being lost from sight in the sclera. They are carried through the scleral stump and out through the limbal lip of conjunctiva, then back through the medial lip, the previously placed stay suture serving as a guide. The suture is tied on the outside, this precaution eliminating the possibility of a knot cyst such as sometimes occurs when knots of chromic catgut are buried under the conjunctiva.

5. The resection or strengthening operation is carried out by essentially the same technique except that the buttonholes are made in Tenon's capsule about 1 mm. from the tendon edge and that the check ligaments are preserved as much as possible.

Shortening operations in the future will be greatly simplified by the use of the triple-armed suture devised by Lisman[3] for resection procedures on the external ocular muscles. It is described as follows:

The usual double-armed suture is converted to a triple-armed suture by passing a Jamieson needle over the needle at one end of the strand of catgut and leaving it in the center. The central needle is passed through the muscle at the center, from the outside in. All three needles are then passed through the muscle stump, after which the central needle is cut free, leaving two complete sutures, which are tied as usual.

Lisman mentions as advantages of this suture 1) simplicity, 2) easier alignment of sutures in the muscle belly, 3) economy of suture material, 4) greater accuracy in placing the suture, 5) saving of time, which is important when the operation is done under general anesthesia, and 6) less tissue trauma, since there are only three needle punctures (muscle, tendon and sclera) rather than the four inevitable when two separate sutures are used. The triple-armed suture in my opinion is all that Lisman claims for it, and it is so remarkably convenient, while at the same time so simple, that it is curious that no one has described it earlier.

Recession of the Inferior Oblique—Recession of the inferior oblique is accomplished much more readily when surgery is also done on the lateral rectus muscle, because most of the dissection is completed before the inferior oblique is picked up. It is possible, however, to recess the inferior oblique without operating on the lateral rectus, as follows:

An oblique incision is made through the conjunctiva and Tenon's capsule just below the inferior border of the lateral rectus. The muscle hook is introduced with its point downward and is slipped backward along the sclera until the point is behind the posterior border of the inferior oblique muscle. The point of the muscle hook is then rotated outward and the hook is drawn out. By this maneuver the inferior oblique is readily picked up on the hook. Careful dissection of the capsular attachments is carried out by blunt dissection with the scissors. My own technique includes the placing of a suture in the sclera, being certain that the scleral bite does not transfix the sclera and is placed in line with the anatomic relation of the muscle to the globe. The muscle is severed carefully, not too near the scleral insertion, because of the important vessels in that area. The needles are inserted about 2 mm. from the cut ends of the muscle, so that the sutures will not pull out of the tissues when they are tied. The conjunctiva and Tenon's capsule are closed with No. 0000 plain catgut sutures.

Summary

An attempt has been made to outline the general principles of management of the common motor anomalies of the ocular muscles and to call attention to certian techniques which simplify their surgical correction. Accurate diagnosis and individualization of cases are the basis of successful surgery.

The Physician's Responsibility in the Diagnosis of Gastric Carcinoma*

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PUBLIC knowledge of cancer has taken great strides in recent years through various educational programs and the formation of the American Cancer Society. Because of this determined interest and the knowledge that something can be done about cancer, great advancement is being made in the care of cancer generally. Most of this advancement has not been due so much to improved methods of treatment as to encouraging patients to seek early diagnosis and treatment during the curable stages of the disease. It is unfortunately true that with cancer of the stomach, as in cancer elsewhere, when hopeless extension has occurred, by direct extension, regional or generalized metastasis, the patient is now just as incurable as similar patients ever were in years past. However, cancer of the stomach is curable but only if diagnosed in an early stage. We as physicians partially are responsible for the general feeling that cancer of the stomach is incurable and it is our responsibility to change this attitude. By encouraging patients to see us at the onset of symptoms and making determined efforts to make an early diagnosis we can eventually prove that cancer of the stomach is a curable disease.

Years ago tuberculosis was thought incurable also, but with determined efforts by physicians, societies and the general education of the public, the annual death has declined markedly. With the same initiative the death rate from cancer of the stomach can be brought down. Presently approximately 52,000 die of tuberculosis per year in the United States, a disease which affects all age groups. Various estimates as to the number of deaths from gastric carcinoma per year in the United States vary from 30,000 to 50,000 and Bockus[1] states that approximately three-fourths of all gastric carcinoma occur after fifty years of age. Thus we have a disease limited mostly to a relatively small age group, paralleling in deaths, however, a disease that affects all age groups. We therefore, should avail ourselves of every means to bring this appalling death rate of gastric carcinoma to lower levels.

The responsibility for the control of gastric cancer lies primarily with the internist and general practitioner, and secondarily with the radiologist, not with the surgeon as many seem to think. In the early stages of gastric cancer, the surgeon will and does produce a cure. It is in those cases of advanced stages that the surgeon cannot cure but only palliate.

The clinician, the roentgenologist and the pathologist form an essential team in diagnosis and this is particularly true in the detection of gastric carcinoma.

We know too well that there are no typical symptoms or physical findings in early carcinoma of the stomach. The symptoms may vary from gallbladder type syndromes and peptic ulcer type syndromes to vague and inconsistent complaints of bloating, belching, heartburn, constipation and indistinct abdominal discomfort. Not infrequently the presenting complaint may be apparently general in nature, such as weight loss, weakness and loss of energy. These complaints in the patient of the cancer age group should be carefully considered by the alert physician.

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*Read before the Section on Medicine at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

†Department of Internal Medicine, Street Clinic, Vicksburg, Miss.

It is well for the clinician to remember the age incidence and also that patients with longstanding digestive complaints are less likely to have gastric cancer than those who develop digestive symptoms formerly not present.

Consequently, our first rule should be that any patient in the cancer age, particularly above fifty years, with any gastro-intestinal symptoms of recent origin should have all available means of diagnosis with the primary thought in our mind of the possible presence of carcinoma.

Too frequently we use conservative medical treatment in a symptomatic manner and allow our patients to go unnecessary periods of time before finally advising diagnostic studies. We should insist on these studies first and temporize later. In this way we may detect the presence of gastric cancer many weeks earlier when time is most important.

The duty of the physician is to refer any patient suspected of having a gastric cancer immediately to a competent roentgenologist for thorough x-ray studies. If no lesion is found on the first examination and the patient continues to complain of his symptoms, repeat examinations of the stomach should be insisted upon. In those cases which present difficulties in diagnosis by x-ray, the use of the gastroscope by a competent gastroscopist is of great value, especially where the gastric lesion is of a questionable nature.

In the diagnostic team that we must have, a skilled and well trained radiologist is probably the most important single factor. Five hundred and thirty-three patients with gastric carcinoma were reported by Maimon and Palmer[2] in whom a correct diagnosis was made by x-ray examination in 92 per cent. It should be realized that negative roentgenograms do not always mean that no cancer is present and that when there is proper justification repeat roentgen procedures should be carried out. Cooper[3], reporting a series of 229 cases of gastric carcinoma, found only 71 per cent gave a positive diagnosis after the first x-ray examination but the percentage increased to 90 per cent after repeated examinations. These figures should impress the desirability of repeat procedures even under the most ideal circumstances and with the most competent roentgenologist.

Too frequently the internist or general practitioner is willing to accept as final one negative roentgenological survey and despite continued clinical indication for repeated examination, he assumes the attitude that the patient has developed a neurosis or anxiety complex. We cannot have this attitude on one negative examination and we cannot assume that all radiologists and all roentgenograms are infallible.

Unfortunately, competent radiologists are at a premium, mainly because radiology is a comparatively new field. Still we are doing the patient an injustice if we falsely give him a clearance of security by some radiologist not competent for a final opinion. No matter how much we educate the general public in the important of detecting cancer at an early stage, we have lost all if we cannot justify their confidence in us.

In recent years, there has been appearing considerable literature and suggested methods as means of detecting gastric cancer in the early stages. This work has mainly been carried out by the cancer prevention clinic. St. John, Swenson, and Harvey[4] reported 2,413 subjects within the cancer age group but all without significant symptoms referable to the the stomach. Of this large group, only three malignancies were found after all had been routinely x-rayed. This does not seem a plausible approach to the problem, that is, the massive survey by x-ray. First, we do not have the available personnel to handle such large groups. Second, the patient-physician relationship and understanding would certainly be lost. And finally, the handling of groups this large would in a matter of time become routine in a field so highly specialized as radiology and our whole purpose would soon be defeated. A more logical approach would be the examination of all patients of the cancer age who have any symptoms suggestive of gastric carcinoma. This could be done through an educational program with all patients under the direct responsibility of their local physician who would in turn have the availability of well-trained radiologists.

The routine gastric x-ray of patients with conditions that frequently seem to predispose or be associated with cancer may be another adjunct in our search for early gastric cancer, such as the x-ray of patients with unexplained weight loss, secondary anemia, or pernicious anemia. Rigler, Kaplan and Fink[5] in a roentgen study of 211 patients with pernicious anemia, found 8 per cent to have gastric carcinoma. Repeated examinations were necessary in many patients but their figures, along with others, do emphasize that this frequency of gastric carcinoma in pernicious anemia is more than co-incidental.

Papanicolaou[6] has recently reported his work on the diagnosis of cancer. This new approach to the early diagnosis of carcinoma appears to be one of the advancements in cancer study. He has been able to detect desquamated cancer cells in the secretions of various parts of the body, by a special staining method of wet smears. This diagnostic smear test is based on the exfoliation of malignant neoplasms having a free surface. Most of his determinations have been made on vaginal fluid and sputum but he reports cases where malignant cells were found in the gastric juices, these cases later being proved gastric malignancies.

Only recently, our pathologist was able to diagnose a gastric malignancy by detecting the cancer cells using the Papanicolaou method. Confirmation of this diagnosis has been made and the patient is now convalescing following radical surgery.

This should serve to emphasize that cancer research is going on and with the advent of newer methods of study, education of the public to see the local physician early and frequently, we can hope for a considerable reduction of our cancer of the stomach death rate in the not too distant future.

No one individual can do this, but with the coöperation of many individuals we can offer the people a much more favorable outlook than was ever thought possible a few years ago.

Summary

This paper emphasized the fact that gastric carcinoma, a disease of a limited age group almost parallels in death rates tuberculosis, a disease which affects all age groups and a disease which was formerly our number one health problem.

The responsibility of lowering the death rate of gastric carcinoma lies primarily with the clinician and secondarily with the radiologist, and these physicians should work together along with the education of the public, if we hope to diagnose cancer of the stomach in its earliest stages.

The value of the well-trained and competent radiologist has been stressed and the extreme importance of repeat x-ray procedures when indicated has been emphasized.

The method of massive x-ray survey of asymptomatic individuals does not seem logical, but the x-ray of all patients of cancer age with gastric complaints may be an approach more suitable if under proper supervision.

Finally, new and encouraging methods of study in the early diagnosis of cancer seems promising and with the coöperation of many individuals the outlook seems more favorable than ever before.

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Discussion

Moncure Dabney (Crystal Springs)—When we consider that an estimated 50 per cent of gastric carcinomas have metastasized when the first symptoms appear it becomes evident that we can't hope to save them all. On the other hand when we consider that on the average a year elapses between the onset of symptoms and the established diagnosis it is just as evident that much can be done by shortening this interval. Certainly the general practitioner sees the majority of patients with gastric carcinoma first. His armamentarium is very limited and when objective findings are present it is usually too late for any hope of cure. It is his responsibility to suspect cancer and to refer this patient for specialized study without delay. To insist on necessary studies without instilling too much anxiety is most important. It is equally important to avoid undue reassurance without adequate study as many will interpret the slightest assurance as a clean bill of slate; they so want it that way.

Insofar as the public is concerned, I believe too much emphasis can be put on the obscurity of early carcinoma of the stomach. It is conceivable to me that many gastric neuroses may be aggravated or even produced in susceptible individuals by this emphasis. However, it is only by alerting patient and physician that material reduction in gastric carcinoma deaths can be effected. I think Dr. Ferris is to be commended on an excellent presentation of a timely subject.

Tom B. Dominick (Vicksburg)—The great program of education concerning cancer which is being put before the laity should tremendously increase the physician's interest in the early diagnosis and treatment of cancer. Only after we have thought of cancer and made every attempt to rule it out have we done our share in making this program a success.

Dr. Ferris in his paper mentioned the radiologist as a member of the diagnostic team and it is about him that I would like to make a few remarks.

It is the general consensus of opinion that radiographic and gastroscopic examinations are probably the best means for making a diagnosis of early cancer of the stomach. They both have their good and bad features but should not be thought of as competitive methods of diagnosis.

I strongly endorse Dr. Ferris' statement that all patients with persistent symptoms referable to the gastro-intestinal tract, however vague they may be, should have a thorough x-ray study. I, personally, feel that an adequate x-ray study should include fluoroscope in the standing and prone positions and also films taken in different positions. All lesions cannot be seen fluoroscopically, particularly in the obese. Films become a permanent record from which others beside the roentgenologist can form an opinion and the progress of the case can be followed more accurately. An old set of x-ray films can often give invaluable information when used for comparison with recent films.

I would like to discourage the idea that the roentgenologist enjoys disproving the referring physician's diagnosis. His sole purpose is to make a diagnosis if possible, but he must have your help and any information about the patient which you as the referring physician may give him. Our percentage of correct diagnoses will increase only when the pathologist, radiologist, and referring physician act as a team.

Dr. Ferris emphasized the false security that can be derived from a single negative report. Repeated examinations are to be encouraged and are not a reflection on the physician requesting them. Early lesions of the stomach are often obscure and many human and physical factors may prevent their detection at the first examination. None of us wants to take advantage of our patients, but I feel repeated studies in the face of persistent symptoms is good medicine.

Superficial fluoroscopic gastric surveys, as Dr. Ferris brought out, are not the answer to our problem at present; however, I do not feel the idea should be abandoned. Kirklin and Hodgson, as reported by Swenson, estimated it would take 1900 radiologists each examining a stomach every four minutes, eight hours daily, including holidays, year after year to examine our population over forty years of age. From these figures we can see it is not practical but Drs. Swenson, St. John and Harvey found they could reduce the amount of time for each case and also examine only those over fifty years of age, thus reducing the number to be examined. In 2500 patients they found only three cancers of the stomach. These are disheartening facts but this method still has great possibilities.

I am sure Dr. Ferris' paper has stimulated some interest in the great problem of gastric cancer and the points he has stressed are vital in waging a successful battle against it.

Cancer now ranks second among all causes of death in the United States, (being surpassed only by heart disease) a position it has maintained since 1929. It now accounts for more than 1 out of every 8 deaths and is the leading cause of death among women between the ages of 35 and 55 years. As shown in figure 4 the ratio of cancer deaths to all deaths varies with age and sex. More than 1 out of every 4 women who die between the ages of 45 and 60 die of cancer.

Hypertension in the Light of Recent Investigation*

G. Y. GILLESPIE, JR., M.D.
Greenwood, Miss.

PRIMARY or essential hypertensive disease is one of the most important and perplexing medical problems of the day. Statistical studies prove that one death out of every four after fifty years of age, results from complicating sequelae of hypertension. Over 600,000 deaths in 1946 were the result of hypertensive disease. The AMA **Journal** listed in 1947 3040 deaths of physicians, at an average of 66.7 years. Of this number over 1900 or 60 per cent died as a result of hypertensive disease.

There is a distinction between hypertension and hypertensive disease, because it is important to distinguish between elevation of blood pressure as a reversible haemodynamic alteration, and hypertensive disease as an irreversible progressive process. The state of elevated blood pressure, both systolic and diastolic, in a patient without obvious or determinable organic changes in the tissues, may be accompanied with associated symptoms, or may be asymptomatic, and does not necessarily reflect the severity of the disease. It is true that certain disease processes such as bilateral or unilateral renal disease, endocrine gland disease such as tumors of the pituitary or suprarenal glands, congenital defects such as coarctation of the aorta, toxemia of pregnancy, and many more, are often associated with high blood pressure. The mechanism of the hypertension in these cases is just as obscure as in the patients in whom the hypertension is unassociated with recognizable structural diseases. Thus for a logical and simple classification we have, 1) primary or essential hypertension and 2) secondary hypertension associated with demonstrable organic tissue changes. Long continued primary essential hypertension eventually produces degenerative organic diseases.

Although no structural basis has been proved in the early period of hypertension, investigation and study have suggested a chain of factors operative in the etiological pattern. First, there is a biological or genetic tendency to the development of hypertension that has been shown transmitted through the third generation. It has been found that when neither parent has hypertension, only 3.1 per cent of the children develop high blood pressure, whereas when one or both parents had hypertension the incidence in the children was 28.3 per cent and 45.5 per cent respectively. Second, endocrine or humoral substances released into the blood stream under certain conditions appear to have a definite action in the production of hypertension. A tumor of the chromaffin tissue system, of which the adrenal medulla is a part, produces a hypertension by the discharge of large amounts of adrenalin-like or pressor substance into the general circulation. After renal ischemia from whatever cause, an enzyme, renin, is released in the blood that apparently acts on a fraction of the plasma globulin, forming a pressor substance, hypertensin or angiotin, that is believed to act directly on the blood vessels, causing a generalized arteriolar constriction. However, investigation suggests, renal ischemia is not the primary etiological state in human hypertensive disease, but appears to be one of the sequelae of the hypertensive process, thus creating a vicious circle in the disorder. Third, in view of the marked variations in occupational and racial incidence of hypertensive disease, it is difficult to dismiss the idea that nervous strain, anger, fear and other emotions, predispose to the development of the disorder through the mechanism of a sympathetic nerve, and ephedrine induced, generalized vasoconstriction. This can be a rapid or slow evolutionary process. We all know subjective symptoms and the phobia of high blood pressure are often created in patients when they are informed of the presence of hypertension. Fourth, consumption of conglomerated combinations of various food substances, associated with overweight, certainly have an important role in the etiology, as is so well demonstrated by the benefit and improvement incident to correction of these faults in patients in whom hypertension has developed. Whatever part these factors may play in the production of hypertension, and in whatever sequence they may appear in the etiological pattern, the primary physiological disturbance that causes an increase in peripheral resistance and abnormal elevation of diastolic and systolic blood pressure is still unknown.

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*Read before the Section on Medicine at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

The symptomatology is not the hypertension, which is merely a clinical sign obtained by an instrument, but rather the symptoms of the disturbed organic and functional integrity of the various organs and systems of the body. Time does not permit descriptive discussion of these varied symptoms. The benign phase of essential hypertension is used to denote the period of apparent well being of the patient with high blood pressure, and may be characterized by a long period of years of comparative good health, but there is no assurance that the next moment may not bring an acute episode as coronary thrombosis, cerebral embolism or hemorrhage, or the onset of acute left ventricular failure. These are severe organic changes that are not reversible. When the severity of the symptomatology is great and the rate of evolution rapid, the malignant phase of hypertensive disease is indicated and the prognosis is grave. One of the most hopeless feelings that can confront the practitioner of medicine is to see a patient in the third or fourth decade of life develop a malignant progressive hypertension and regardless of all that can be done by medical or surgical therapy, watch him or her rapidly come to an untimely end.

In no illness is thorough investigation and study more important than in hypertensive disease. A careful history, a comprehensive physical examination, which should include ophthalmoscopic examination of the retina and neurological studies, laboratory studies of the blood and urine, functional tests of the kidneys, chest films of the heart and electrocardiograms, will largely determine the degree of association of hypertension with organic or structural changes and not only aid in the symptomatic treatment, but afford the physician a checking account of what the hypertension is doing to the patient. Although hypertension is a chronic disease that may suddenly enter the so-called malignant stage with marked acceleration of all the degenerative processes, or may show an acute complicating episode, in the majority of patients it continues to progress year after year, or may stabilize or actually regress. If the disease progresses, it usually follows one of three patterns: 1) The heart is predominantly affected and symptoms of myocardial exhaustion appear. Over 50 per cent of the cases of essential hypertension are in this group. Or 2) the central nervous system with its acute episodes becomes predominantly involved. About 40 per cent of patients die from this complication. 3) Serious impairment of renal function and death from uremia accounts for about 10 per cent of patients.

There is no specific therapy for progressive essential hypertension. Symptomatic treatment directed towards lowering the blood pressure is an unsatisfactory approach to the curve of hypertensive disease, but since the primary etiological factor is unknown, by accurate appraisal of the type of hypertensive disease present, a great deal can be done by symptomatic management, both medical and surgical, that not only makes hypertensive patients more comfortable and contented, but actually prolongs their lives. I beseech you, therefore, as physicians, eagerly anticipating the day medical science and research will determine the primary etiological factor of hypertensive disease, to give conscientious consideration and study in the examination and treatment of every patient seen presenting the symptom of hypertension, in order that he or she may receive the vast benefits both mentally and physically, that medical science already offers for this complex phenomenon.

Disease of the arteries, as a result of hypertensive disorders, is by far the leading cause of death today, and as usual, it is up to the practitioner of medicine to carry forward the fight in advocating and stimulating the organization of a great centralized coordinated, scientific research to determine the primary etiological factor, and thus the prevention or cure, of this great destroyer of mankind.

Discussion

W. W. Lake (Pass Christian)—Dr. Gillespie has presented a very comprehensive summary of the present status of essential hypertension in the brief time allotted him.

I agree with him that all cases of hypertension should have a thorough work-up including a complete laboratory survey in addition to a careful history and physical examination. Only after such a survey are we able to separate the cases of essential hypertension from those of known etiology.

As Dr. Gillespie has brought out, having classified a case as one of essential hypertension, we must then carefully evaluate its pathological and symptomatic severity and its rate of progression. This evaluation largely determines the method of treatment to be adopted. We must observe not only the rate of progress of the disease process, but also the response to therapy. If the usual conservative forms of treatment do not suffice and more especially in those cases of malignant or severe symptomatic hypertension we may have to decide on a more radical mode of treatment without undue delay.

In recent years two new and proved methods of therapy have been added to our armamentarium for those cases of malignant or severe symptomatic hypertension and those cases not responding to usual regimen of rest, sedatives, weight reduction, responsibility reducing procedures.

For the critical and formerly hopeless cases, the surgical treatment of essential hypertension offers the best results in selected cases. There are several such surgical procedures. Pett's supradiaphragmatic sympathectomy, a one stage procedure, removes bilaterally the lower sympathetic ganglia, the intervening trunks, and as long a segment of the great splanchnic nerve as possible. Smithwick's thoraco-lumbar splanchnicectomy and lumbo-dorsal sympathectomy, is a two-stage procedure removing the lower four or five dorsal sympathetic ganglia with their intervening trunks, the splanchnic nerve and from the first to the third lumbar ganglia bilaterally.

Factors determining whether sympathectomy will be of value or not are age of patient, sex, renal function, pulse pressure, response of blood pressure to posture and cold pressor tests, response to sedation, and presence or absence of history of pyelonephritis.

Additional prerequisites by Peet are a compensated heart, a non-protein nitrogen below 45 mgm. per cent, a minimal urea clearance of 60 per cent, a kidney concentrating ability of 1.014 at least, and an acceptable kidney function as demonstrated by intra-venous pyelography.

Recently the age limit of forty-five years has been extended to as high as sixty. Cases of compensated heart failure, cardiac hypertrophy, healed myocardial infarct, slight angina pectoris, and minimal cerebral-vascular accidents are now included among those eligible for the operation and who may be benefited by it.

The blood pressure was appreciably lowered in 65.8 per cent of Peet's cases. Eighty to eighty-five per cent of Smithwick's cases were clinically improved. These operations do not constitute a cure but are an effective method of management in formerly hopeless cases until something better is found.

The best medical treatment at the present time in patients with essential hypertension with or without renal impairment is one of two low sodium dietary regimens:

1. Kemper's rice diet consisting of rice, sugar, fruit to make 2000 calories. Water is limited to 1000 cc. daily. This diet contains 0.20 gm. sodium, iron and vitamin supplements are given.

2. Grollman's low sodium diet (and numerous modifications) is more varied, palatable, and more easily accepted by the patient. More protein is allowed by using milk dialyzed free of sodium. The closest commercial milk product is lonalac.

The blood pressure is lowered with both of these diets and many patients are definitely objectively and subjectively improved. A word of warning however, in hot weather these patients may develop anorexia, weakness, loss of mental acuity due to sodium deprivation.

As Dr. Gillespie has said our present treatments are not the last word—but the best available now, and should be made use of. The answer to the essential hypertensive problem probably lies somewhere in the solution of the problem of sodium metabolism and its relationship to adrenal, kidney, cardio-vascular functioning.

I. B. Bright (Greenwood)—I would like to take this opportunity to thank Dr. Gillespie for giving us one of the most practical and logically presented papers on hypertension it has been my privilege to read.

There is little or no drama in the treatment of hypertension, neither are there almost immediately discernible results obtainable such as those noted in surgery. The busy physician who wearily notes the same or a gradually climbing blood pressure reading month in and month out is apt to become discouraged and lose interest without realizing that he does so. He is apt to shrug mentally and feel that the matter is in the hands of the gods.

It should be constantly borne in mind that many patients who live for years with this disease may do so because of adequate medical care and merely because the blood pressure readings remain the same is no reason for assuming failure. If the patient's life is prolonged this is surely as much of an achievement as a successful cholecystectomy.

The technic of treatment as Dr. Gillespie has so ably pointed out should take advantage of what we do know about the etiology of the disease both clinically and theoretically. Rest, sedation, psychotherapy, and drugs should all be used. And recently surgery has been finally assessed as being of definite value in many cases.

The ideal time to begin treatment is early in the disease and for this reason serious consideration should always be given to any or all of the therapeutic factors mentioned above as early as possible.

BLOOD PRESSURE TECHNIQUE

(Guest Editorial)

DOUGLAS D. BAUGH, M.D.
Columbus, Mississippi

A GENERATION or two ago the first step in any physical examination was to look at the patient's tongue. While it is still an important procedure, its relative position in the examination has been largely superseded by taking the patient's blood pressure. This has been brought about by the widespread prevalence and recognition of hypertension disease.

Heart disease is the leading cause of death, and hypertension is the leading cause of heart disease. (Seventy per cent of hypertensives result in fatal heart disease.)

Such a routine daily procedure as taking the blood pressure is often done poorly and incorrectly. A physician who rushes through a careless blood pressure reading is open to as much censure as his technician would be in failing to do a careful, accurate blood count.

The immediate object in taking a blood pressure reading is to learn the degree of arterial hypertension that the patient has under as nearly as possible basal conditions. Errors are made both in the technique of making the reading and in the conditions under which the reading is made.

As to the technique, the cuff (of at least four inches width) should be wound firmly over the inside of the arm where it is nearest the brachial artery. The sphygmanometer should be placed on an approximate level of the patient's heart, and the pressure should be released at such a rate that the column of mercury or the indicator will fall only two or three millimeters (one to one and one-half divisions on the scale) per second.

One of the most common errors is to release the pressure so rapidly that the apparent reading is higher than the actual blood pressure figure. Often one or two additional readings before the cuff is removed will establish a more accurate figure—especially if in doubt about the original one.

If the patient is reclining and has a heavy arm the elbow may be supported, so that the weight of the arm is not transferred to the inflated cuff. A more accurate end-point in determining the diastolic pressure is possible if the point at which the sound disappears is used.

The conditions under which the blood pressure is determined are all-important. As in a metabolic reading the test should be made under, as nearly as possible, basal conditions —that is, conditions where the reading is influenced to the minimal degree by the emotional state, unfavorable position of the patient, and other disturbing factors.

While it is true that a high percentage of those showing abnormal blood pressure response to emotion will eventually develop sustained hypertension, one is usually concerned with **actual** rather than the **potential** blood pressure.

Usually taking the history relieves the apprehension some, but engaging the patient in light conversation is often more effective.

The patient should be placed in a comfortable position close against the examiner's table or desk, so that he will not be leaning in a strained way. Then he should be calmly asked to relax; the examiner must observe that he **is** relaxed before proceeding. If the blood pressure is found to be abnormal a subsequent reading or two will often be more accurate than the original one with its attending greater anxiety.

Observing these precautions can make a difference of from ten to thirty-five mm. in the systolic reading, which margin may mean the difference between whether or not the patient will be labelled a hypertensive.

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

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Editorials

The Southeastern Hospital Conference will hold its annual session at the Buena Vista Hotel at Biloxi, April 27, 28, 29. This convention should be well attended from our state. If we are hospital minded, we need to know all there is to be found out about hospitals. They are a great means by which better medicine is carried to the people. Our eternal aim should be better hospital service for less cost. The people are becoming more and more hospital minded recognizing it as a factor not only in the health of the people, but in their social and economical life as well.

The American Academy of General Practice held its first scientific session in Cincinnati March 7, 8, 9. The academy was founded on June 10, 1947, at Atlantic City. It is a national association of general practitioners of medicine and surgery. Dr. Paul A. Davis, Akron, Ohio, is president; Dr. Elmer C. Texter, Detroit, incoming president; Dr. Stanley R. Truman, Oakland, California, president-elect; Dr. Jason P. Sanders, Shreveport, La., vice-president; Dr. U. R, Bryner, Salt Lake City, treasurer; Dr. R. B. Robins, Camden, Ark., speaker of the congress, and Mac. F. Cahal, Kansas City, executive secretary. Our state, Mississippi, was represented by Sheiberth Kety, Picayune, as president, and S. K. Johnson, Pelahatchie, as secretary.

The officers expected about eighteen hundred to two thousand at this meeting, but it ran more than three thousand. The scientific program was one of the best we have ever attended. The papers were unusually good, and the interest reached the top. The general banquet was attended by about one thousand doctors with five hundred wives. There was a long list of exhibitors and the best pleased group we think we have seen.

Speaker Robins was a big driving factor in the meeting. The association took a strong stand against socialized medicine; no compromise on this subject had a chance.

Qualifications for membership in the academy were discussed and it was made evident that the academy has as its aim better service to the people. A certain number of hours of postgraduate work is required for continued membership.

The matter of privileges in hospitals for members of the academy was discussed, members being expected to be qualified and worthy of serving their patients in hospitals and permitted to treat them in hospitals if they so desire. The organization is to serve general surgeons as well as general men in medicine. Speaker Robins is an active member of the American College of Surgeons.

The recent meeting of the academy, its organization, marks a new era in medicine in our opinion. It means that the rank and file of doctors will raise their standard of efficiency and they will be recognized according to their worth in the medical fraternity. It means a better coordination of all the medical forces from the country practitioner to the specialist in the field of research. The uniting and the utilization of all these forces means better medicine for all the people. This academy will be a great factor against socialized medicine and will make the general man more appreciated than he has been. In numbers this organization will soon be the second largest medical organization in the world.

And we were asked Why are you against socialized medicine, regimentation in medicine? There are many reasons. Too many doctors do not do their best work unless they are stimulated by competitive effort and stimulated by the doctor-patient relation, and too many people stay sick too long when the bills are being paid by the government.

FROM OUR PRESIDENT

Our state meeting in Biloxi at the Buena Vista Hotel May 10, 11 and 12, offers you one of the best meetings that we have ever had and also a good time with it. Our program with Dr. F. A. Davis as chairman of the Section on Medicine, Dr. E. R. Ross chairman of the Section on Surgery and Dr. Geo. Riley chairman of the Section on Public Health and the Section on Eye, Ear, Nose and Throat under Dr. Abernathy will have a splendid array of essayists. Interesting programs in pediatrics, surgery and medicine will also be put on by the members of the different academies represented. All doctors are invited. Fishing and other recreational facilities will be good. Golfing will be available, as will skeet shooting. Swimming will be at its best, so carry bathing suits and skin lotions.

The Coast doctors are not leaving anything undone for a good time. The hotel will have the new convention hall ready, and it is said to be the best in the nation. Also Mrs. Avent will have the Ladies' Auxiliary in full swing. You are therefore urged to carry your lady along. You owe it to yourself and to the Association to attend your meeting at this time when all true doctors need to be up and defending their rights against politicians.

May I urged you to make plans now and get your hotel reservations for this meeting. You will be well paid in every way and do your duty to the profession. Meet you in Biloxi in May!

R. B. Caldwell, M.D.
Pres. Miss. State Med. Assn.

WHAT'S BEING DONE

A long over-due question we would like to ask of the Mississippi Medical Association is what is being done about the central teaching hospital to be built in Jackson and what is being done to found a medical school here in the state?

The recent decline in the number of doctors in Mississippi should be reason enough to convince the doubting that there is a need for a medical school here. Mississippi students study out-of-state and just don't come back.

Our present hospital construction program for the state is a part of a long-range program to provide general care for the people of the state. Along with that hospital program were plans to install a larger, general teaching hospital in Jackson. This big unit would be equipped to handle unusual cases and provide the facilities for teaching medical students. Those were the reasons it was planned.

Representative Walter Sillers, we are told, introduced legislation some time ago authorizing the construction of the hospital for teaching purposes. He wisely killed one bill to build a medical school because at the time, instructors were not available. Mr. Sillers believed that the school should be well-staffed with highly trained medical teachers.

But the site for the hospital, the funds and the right to commence a medical school are all still available, so we are informed. If all of this is true, then we wonder why the Mississippi Medical Association has not begun an investigation to learn why nothing is being done?

—The Delta Democrat Times

You note the above from the **Delta Democrat-Times** from the nationally known Hodding Carter. We feel greatly encouraged that he is putting his powerful pen behind a four-year medical school for this state. You may note also that Mr. Lilienthal is urging the responsibility of the doctor in the humanitarian side of the atom-bomb. And further, the report of the alumni meeting at Ole Miss on April 1 stresses the opinion of an Oak Ridge emissary. Dr. Brucer is a lover of the truth, and speaks with authority and with courage. If every person in the state could have heard what he had to say, surely there would be no more opposition to a four-year medical school. Chancellor Williams' endorsement of a medical school showed great vision for it.

We should have had the medical school several years ago. It is true that the hospital system we have in the making will be a wonderful asset, but to have had a good central teaching hospital and building for the school and, above all, an able faculty we might already have had the best medical school in the United States. We need more scientific medicine, but at the same time we need heart and soul and godly spirit in medical science and in the utilization of atomic power. Mississippi can easily have the most practical medical school in the nation. We have hundreds of fine men who have professional minds, medical souls and missionary hearts who want to study medicine, but are denied because our people, our lawmakers, have been lacking in medical vision and courageous action. The man who would oppose a medical school now in our state would see a house burning with little children in it asleep, and say wait until tomorrow to awake them. He would see a man sinking in the river for the third time, and wait for a more convenient season to rescue him. Mississippi has been acting big in some ways but as little as a peanut when it comes to a four-year medical school. We are planning a twelve million-dollar nitrate plant, which indicates business vision, we think. But after all, health is the nation's greatest asset. Mississippi has resources in her citizenry and in her natural assets that are bound to win. Our progress can no more be stopped than can the Mississippi River be made to flow backward into Minnesota. It is too bad that we have a few men who belong to the defeatist crowd as did the ten spies who visited the promised land. It is time for us to quit classing our state as a renter, a share cropper, and as poor white trash. Mississippi ranks first in an arterial system of roads, and on the same score we can have the best medical school in the United States by avoiding a lot of the errors made by others. Mississippi ranks first in pecan production, tung oil, shipbuilding; it has the largest percentage birth rate and the lowest death rate of any of the Southern States. It has the best health department in the United States; it has the world's largest cotton plantation, 35,000 acres, baseball bats for the big leagues come from Mississippi, every radio made in the nation is tested with equipment made at Greenwood, the largest dormitory in the world is at State College, eighty percent of the nation's shrimp is shipped from Mississippi. Mississippi ranks second in cotton production, first in cotton production per acre, third in lumber, and first in pulpwood. We know our state ranks very high in many more ways. We do hope that we have no more people willing for us to continue working on the halves when it comes to a medical school.

The Delta Medical Society meets at Greenville, April 13, at two P. M. with Dr. C. W. Patterson presiding as president and Dr. Frank Acree as secretary. Dr. Lyle Motley of Memphis is the guest speaker, his subject "Indigestion." Drs. G. P. Grable, John Beard, S. L. Brister, S. W. Colquitt, and Charles Berry are on for a variety of subjects: Addison's disease, pneumonary tuberculosis as it concerns the general practitioner, observations of erythroblastosis, medicine in the Delta for the last fifty years, and intra-medullary pinning of shaft of the femur. This is a fine program up to the usual for the Delta Society.

At the Alumni Reunion for the doctors at Ole Miss on April 1 Dr. Milton Adams of Memphis and Dr. Grant Thompson of Jackson were on the scientific program in the afternoon. From the addresses of Chancellor Williams and Dr. Brucer of Oak Ridge, both informative and inspiring, the four-year medical school really got a promotion at the meeting.

Dr. Rudolph Matas, dean of the surgical world, will be the guest speaker of the Fifty Year Club in Biloxi. He will pay a tribute to the beloved Dr. W. A. Evans. Dr. Seale Harris and Mr. Loranz and other distinguished guests will be present.

The second biennial meeting of the Mississippi Division of the American Cancer Society held in Jackson March 11 was very outstanding, no better meeting has been held in this state. We are sure much credit is due Mrs. Elizabeth N. Wates, Drs. Underwood, Gray, Gamble and Parsons for this most unusual meeting covering all phases of the cancer problem.

FROM DR. BRYAN

It has been suggested that a portrait of Dr. W. A. Evans be procured and placed in the Mississippi Hall of Fame. So far as honoring him is concerned this might be an unnecessary gesture, since none of us now living will live to see the day when the fame that he has acquired and has so richly reflected upon our profession and our state, will not be known and remembered throughout the state and nation. While he was not born in Mississippi he was brought into the state in his infancy and has always acknowledged and claimed Mississippi as his state. Therefore, I insist that proper steps be taken at once to carry out this suggestion.

Respectfully suggested by
(Dr.) G. S. Bryan

SOUTHEASTERN SURGICAL CONGRESS

The seventeenth annual assembly of the Southeastern Surgical Congress will be held in Biloxi, Mississippi, at the Buena Vista Hotel, May 23, 24, 25, 26, 1949.

There will be forty-three papers presented by distinguished surgeons from the South and throughout the country. This is a very comprehensive program and the medical profession would do well to take advantage of this opportunity to hear these men.

FIFTY-YEAR LUNCHEON

The luncheon for the Fifty-Year Club at the state meeting in Biloxi will be at the Buena Vista Hotel on Tuesday at 12:15. Please write us if you expect to be present. We think the attendance will be good. Check up and see if you have had license to practice medicine for fifty years. For this luncheon we shall have Dr. Matas of New Orleans who is an honorary member and at which time he will be delivered his pin and certificate, and pay a brief tribute to our beloved Dr. W. A. Evans, who was president of the club. The knowledge and the wisdom of the men who have been practicing fifty years constitute great assets. They are most deserving. They have contributed more in service, social, economical and medical, than can be estimated in dollars. We love to pay tribute to these men. We are extending everyone of them a most cordial invitation to be present at the luncheon on May 10.

ATOMIC HEAD SAYS M.D.'S HAVE JOB

David E. Lilienthal, head of the U. S. Atomic Energy Commission, has called on the nation's physicians to learn how to meet atomic warfare conditions "if they should ever come."

He said a "better understanding" of atomic energy is badly needed, and that the physicians who have close contact with the people can help create that understanding.

"The medical man is in a strategic position to help all the rest of us see the atom in perspective—partly bad, partly fearful, partly destructive, but also partly beneficial."

MEDICAL LOANS

State Medical Education Board offices are now receiving applications for loans to become effective in the fall of 1949. Shortly before March 1, first date on which applications for fall loans may be accepted, application forms and detailed information were sent to a large number of students who have already signified interest in loans for the school year 1949-1950.

The State Medical Education Board will begin consideration of fall applications during the summer months. All applications for loans to become effective in fall of 1949 should be placed on file by or before August 15.

ACCP

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for fellowship will be held in Atlantic City, June 2, 1949. Candidates for fellowship in the College, who would like to take the examinations, should contact the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10, Illinois.

The fifteenth annual meeting of the American College of Chest Physicians will be held at the Ambassador Hotel, Atlantic City, June 2-5, 1949. An interesting scientific program has been arranged for this meeting, and speakers from several other countries are scheduled to appear.

INVITATION

To the Physicians of Mississippi and Friends of the Mississippi Doctor:

My dear friends:

I am sure that you have noticed that the annual assembly of the Southeastern Surgical Congress will be held in your fair state, Mississippi, on May 23-26, 1949. This is a great pleasure to the Congress to know that you are to be our host on this occasion.

The program as arranged is one of superb character which is to be most interesting on surgery in the broader sense of the word. There are more than fifty speakers to appear on this program and of these you will find no finer anywhere. We are asking that you make your reservations at the Buena Vista Hotel to be with us, and we are looking to you as our host to give us great inspiration both scientifically and culturally on our visit to your state.

If the editor will forgive me, may I say that the **Mississippi Doctor** is doing one of the finest pieces of work in an editorial way that we have in our Southern states, to keep our men abreast of the times in our noble profession.

May we count on you to be present for the first paper and stay through until the last.

Gilbert F. Douglas, M.D., President
The Southeastern Surgical Congress

ANNOUNCEMENTS

The South Atlantic Association of Obstetricians and Gynecologists announces the establishment of The Foundation Prize. Authors of papers on obstetrical or gynecological subjects desiring to compete for the prize may obtain information from Dr. E. D. Colvin, secretary-treasurer, 1259 Clifton Road, N. E., Atlanta, Ga.

George E. Twente, M.D., F.A.C.S., announces the removal of offices from 200 Lamar Life Building to 745 Carlisle Street, Jackson, Mississippi. Practice limited to general surgery.

DEATHS

DR. J. E. FURR

Dr. J. E. Furr, founder of the Marks, Miss., Hospital and for many years one of Quitman County's prominent practicing physicians and surgeons, died at his home in Marks February 22. He had been ill for some time.

Dr. Furr was born in Oxford, Miss., on February 2, 1892, the son of J. S. and Mary Morrissey Furr. He attended the public schools there and graduated with special distinction from the University of Mississippi. He then attended the Tulane University School of Medicine where he also graduated with honors.

After serving an interneship at St. Louis City Hospital, Dr. Furr began practicing medicine in Belden, Miss., but moved after a short time to Marks where he had been practicing since. He founded the Marks Hospital in 1919. His wife is the former Miss Jessie Mae Chrestman of Lyon, whom he married in 1921.

Dr. Furr leaves his wife; a son, J. E. Furr, Jr., and a daughter, Ivy Davidson Furr. He also reared a nephew, Dr. R. H. F. Lynch, who practiced medicine with him in Marks.

DR. ARTHUR M. DOTY

Funeral services for Dr. Arthur M. Doty, founder of the Holmes County Medical Association, were held in Gulfport March 9.

Dr. Doty, 80, died March 7 in a New Orleans hospital. He is survived by his widow, one son and three daughters.

A graduate of Memphis Hospital Medical College, he began his practice in Mississippi in 1898, one year before his graduation.

DR. C. A. McWILLIAMS

Dr. Charles A. McWilliams, 62, prominent physician and surgeon died on March 9 in Gulfport at Memorial Hospital following an illness of several months.

Dr. McWilliams was born April 2, 1887, at Tuscumbia, Ala., the son of John Allen and Bernita McWilliams. After receiving his B.S. degree from the University of Alabama, he studied four years at Tulane Medical College, from which he graduated in 1912. Following his internship, served in St. Louis, he began to practice medicine at Alexandria, La., and shortly before World War I, moved to Biloxi, where he established a general practice. During World War I he served as first lieutenant in the Medical Corps.

In 1920, he moved to Gulfport and began to specialize in eye, ear, nose, and throat work, being associated with the late Dr. E. P. Odeneal for several years.

In 1940 he established the McMillan Clinic for treatment of eye, ear, nose and throat, and had as associates at the time of his death Doctors H. K. Rouse and A. V. Hays.

Dr. McWilliams is survived by Mrs. Nona Harry McWilliams, whom he married April 8, 1920; their two children, Mrs. Archie Dickson, Gulfport, and Mrs. R. . Williams, Poplarville; and two grandchildren. He is also survived by a brother, J. B. McWilliams, Memphis, and three sisters, Mrs. H. B. Palmer, Arlington, Texas, Mrs. T W. Mitchell, Sheffield, Alabama and Mrs. Belle Howland, Chicago.

Dr. McWilliams has been prominent in civic, professional, and church affairs. He was an elder in First Presbyterian Church of Gulfport; member and past president of the Gulfport Rotary Club; a Mason; a member of the American Legion; member of many medical groups, including American Medical Association, Southern Medical Association, Fellow of the American College of Surgeons, American Academy of Otolaryngology, Coast Counties Medical Society (past president), Mississippi State Medical Association, Louisiana-Mississippi O and O Society (past president), and served for a time as chief of staff of the King's Daughters Hospital.

DR. JOHN M. STEVERSON

Dr. John M. Steverson, father-in-law of Lieutenant Governor Sam E. Lumpkin, of Tupelo, died at his home in Moscow, Tenn., March 7, following a lengthy illness. He was 72.

A physician since 1906 at Moscow, Dr. Steverson was prominent in that area.

A graduate of Tulane University School of Medicine, Dr. Steverson was licensed to practice in Mississippi by reciprocity.

He served on the staff of the Mattye Hersee Hospital at Meridian, prior to moving to Moscow, and is well known at Meridian.

Dr. Steverson was born at Saltillo, Sept. 26, 1876, and was married in Moscow in 1907 to the former Anna Burnette. He is survived by his wife and two daughters, Mrs. Sam Lumpkin, and Mrs. Horace Rogers of Knoxville, Tenn.

DR. B. D. HANSELL

Services were held for Dr. B. DeVan Hansell, who died March 7, of a heart ailment. He was sixty-one. Dr. Hansell was a gradute of the College of Physicins and Surgeons, Memphis.

He had practiced in this community since 1913. He was born and reared in Nettleton, Miss., and was graduated from the University of Tennessee Medical School. He was a deacon in the Presbyterian Church, was a charter member and past president of the Okolona Chamber of Commerce, and a member of the Hospital Committee.

He was untiring in his efforts to secure a hospital for this vicinity and was widely known for his charity. He had large farming interests and during the depression had a unique plan of furnishing work for those otherwise unable to meet their indebtedness.

He leaves his wife, Mrs. Pauline Mitchell, Hansell; a daughter, Mrs. E. L. Borden, Jr.; two grandchildren, of Okolona; a brother, Walker Hansell of California, and a sister, Mrs. Mims Bowen of Memphis.

Interpreting Medical Literature

Staff of Review

Dermatology—James G. Thompson, Jackson
Otolaryngology—Charles R. Hume
Ophthalmology—Edley Jones, Vicksburg
Obstetrics and Gynecology—J. F. Lucas, Greenwood.
Orthopedics—Thomas H. Blake, Jackson.
Public Health—Felix J. Underwood, Jackson.
Pediatrics—Harvey F. Garrison, Jackson.
Radiology and Roentgenology—Karl O. Stingily, Meridian.
Pathology—R. M. Moore, Vicksburg, Miss
Surgery—W. H. Parsons, Vicksburg.
Urology—Temple Ainsworth, Jackson.

PEDIATRICS

Hypertrophic Pyloric Stenosis, Arthur A. Schaefer and John Erbes, Milwaukee Children's Hospital, Milwaukee, Wis., Surg., Gynec. and Obst. 86:45-53, Jan. 1948.

"Two hundred and forty-eight cases of pyloric stenosis have been admitted to Milwaukee Children's Hospital between June 1924 and May 1947. The Fredet-Rammstedt pyloromyotomy was done on 233 of these and 15 were not operated upon.

Projectile vomiting, visible peristaltic waves and a palpable pyloric tumor are usually considered the important diagnostic findings. Tumors were palpated in only 63 per cent of the cases in this series, so a more reliable diagnostic procedure was sought for. Roentgenologic examination was found to be almost 100 per cent reliable. "Prepyloric narrowing" and "sting sign" give an exact picture of the stenosed pyloric canal which is not simulated by any other condition during infancy.

Probably the greatest aid in the reduction of operative mortality rate during the past ten years has been early diagnosis and adequate preoperative care. Operation is frequently postponed for twenty to forty-eight hours in a particularly dehydrated individual, while fluids are given. The patients are usually given a blood transfusion before leaving the operating room. The authors believe that this procedure has been instrumental in lessening postoperative complications and making for earlier convalescence.

Biopsy specimens were taken of the pyloric tumor at the time of operation in 72 cases. Microscopic study revealed hypertrophy of the longitudinal as well as of the smooth muscle fibers.

The most frequent complication was accidental perforation of the duodenal mucosa during the operation, which occurred twenty-one times in this series. Five recurrences required a second operation. There were 9 deaths, among the 233 patients treated surgically, an operative mortality rate of 3.8 per cent. During the past ten years there have been no deaths with 172 consecutive patients being operated on without a fatality."

COMMENT: This article in a sense speaks for itself. Many operations can be prevented if they have the necessary treatment, but if and when operations are necessary, it is quite important for them to be done thoroughly and with one who has had experience in performing this type of operation; otherwise serious complications can arise frequently from a slight perforation of the mucosa, which in no sense at any time should be done.

A new film, titled "Cancer: The Problem of Early Diagnosis," which has received the approval of the American Medical Association's Committee on Medical Motion Pictures, is available to the medical profession.

The film, designed for general practitioners, is based on the premise that if cancer were diagnosed early and effectively treated the death rate might be reduced by almost 50 per cent.

MEDICAL LIBRARIANSHIP AND PREVENTIVE MEDICINE

by E. Louise Williams*

A good medical library is indispensable to the protection of health and the prevention of disease. Only as men thirst after and drink at the vast fountain of scientific knowledge, which has come to be recorded in such a library's collection, can they hope to accurately apply the best principles of preventive medicine and be able to contribute further to the remarkable progress of recent decades. The library, properly utilized, can save lives and improve the lot of great masses of the population many times. The invention of the wheel, signifying the beginning of man's advance to a higher state of civilization and immeasureable comfort and convenience, has recently been given a position second to the library.[1] "The library contributes to the individual's cultural and spiritual, as well as to his technical advance," comments one of the country's outstanding medical editors. "Some of the brightest chapters in the story of mankind have been illuminated by the development and preservation of literature."

It is conceded, then, that there must be medical libraries accessible to all who have any part in protecting the health and welfare of the population. Equally important, there must be competent medical librarians to service these collections, to insure that a given technic or a new type of therapy may be located at moment's notice and to get the fullest possible good from the literature available. The present shortage of qualified medical librarians is as serious a challenge to the physicians as the nursing shortage has been.

They may render themselves and others a great service by acquainting young people with the special field of medical librarianship as a career. It is a satisfying career, with continuous opportunity for intellectual growth, self-development, and service to others.

Adequate preparation for such a career consists of the usual college and library school courses, with emphasis upon science and language. The premedical college curriculum gives the student an advantage. Also helpful is some sort of medical experience, such as nursing, laboratory work, or that of a medical student. The Medical Library Association* has recently approved the following grades of training: 1. Four years of college and one year of library school training, including an approved course of instruction** in medical library service; 2. In addition to the completion of training for Grade 1, a six-months' term of supervised experience in medical libraries and under the direction of medical librarians approved by the Association's Sub-committee on Internship; 3. Graduate work in library science and in medical or related subject fields leading to an advanced degree; or, completion of a two-year course correlating work in library science, medical library work, and medical subject work, leading to an advanced degree.

There are several different types of medical libraries, although services and ultimate goals are basically the same in all. A research institution must maintain a working collection as complete as possible covering its special field. The small hospital library, of which it is hoped there will soon be many, must have a good collection of the essential books and journals for the immediate needs of its clinical staff. The hospital library is not to be confused with the hospital records library which is a collection of case records filed according to a special code, nor with the hospital patients' library, which is more or less a public library for sick people within a hospital. Then there are the medical and dental school libraries for the instruction of students and with adequate facilities for teaching and sometimes research. The medical society library serves member physicians and sometimes the general public within a given area. The large health department library whose primary objective is the prevention of disease and the promotion of health, will attempt to have a collection of working tools for the guidance of public health workers, a good cross-section of the general medical literature for the reference use of physicians, dentists and others, and finally an extensive collection of authoritative books on health and disease written primarily for the layman. Great satisfaction is derived from being a medical librarian because of the continuing opportunity it affords to build—and to help others as they work toward improving old medical technics and discovering new ones.

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*Librarian, Mississippi State Board of Health Medical Library, Old Capitol, Jackson, Miss.

1—Editorial, *New Eng. Jour. of Med.* 240: 271, 1949.

*Additional details may be had by writing the Chairman, Committee on Standards for Medical Librarianship, 1430 Tulane Avenue, New Orleans 12, La.

**An approved course is now being offered by Columbia University School of Library Service, N. Y.

The ultimate goal in this search for medical librarians is for quality—not for quantity. Not only more, but better trained librarians are wanted for the important work ahead. It is hoped they will come to the profession imbued with a spirit of service and well qualified to render it.

Recent Additions to the Library

The Library has acquired some outstanding books during the past year, the most of which may be borrowed by physicians for a two-weeks' period. In the main, the bulk of the Library's budget continues to be used for the acquisition and binding of the more important periodicals, enabling the physician to keep up to date on all developments in his field and providing him with an important source of reference material. Journals may be borrowed for three days to a week, depending upon the date of publication. The Library is desirous of reaching physicians in every area of the state and invites their use of its collection as need arises. Among the recent book additions of interest may be included the following:

1. Alvarez, W. C.—*An Introduction to Gastroenterology.* 4th ed. rev. Hoeber, 1948.
2. American Medical Association—*New and Non-Official Remedies.* Lippincott, 1948.
3. Ashburn, P. M.—*The Ranks of Death,* a medical history of the conquest of America. Coward-McCann, 1947.
4. Assn. for Aid of Crippled Children—*The Cerebral Palsied Child and His Care in the Home.* Assn. for Aid of Crippled Children, 1947.
5. Bachman, G. W. and Meriam, L.—*The Issue of Compulsory Health Insurance.* Brookings Institute, 1948.
6. Bachmeyer, A. C. and Hartman, G. eds.—*Hospital Trends and Developments, 1940-46.* Commonwealth fd., 1948.
7. Bartley, S. H. and Chute E.—*Fatigue and Impairment in Man.* McGraw-Hill, 1947.
8. Bellak, L.—*Dementia Praecox;* the past decade's work and present status. Grune and Stratton, 1947.
9. Beverly, B. I.—*A Psychology of Growth.* McGraw-Hill, 1948.
10. Bigley, L. I.—*Community Clinics;* the hospital out-patient department and non-hospital clinics. Lippincott, 1947.
11. Boyd, Wm.—*A Textbook of Pathology.* 5th ed. Lea and Febiger, 1947.
12. Brown, E. L.—*Nursing for the Future.* Russell Sage Foundation, 1948.
13. Cantor, N.—*The Dynamics of Learning.* Foster and Stewart, 1946.
14. Cecil, R. L. ed.—*A Textbook of Medicine.* 7th ed. Saunders, 1947.
15. Deming, D.—*Careers for Nurses.* McGraw-Hill, 1947.
16. Deming, D.—*The Practical Nurse.* Commonwealth Fund, 1947.
17. Dubos, R. J.—*Bacterial and Mycotic Infections of Man.* Lippincott, 1948.
18. Dunbar, H. F.—*Mind and Body:* psychosomatic medicine. Random House, 1947.
19. Ewing, O. R.—*The Nation's Health, a Ten Year Program.* Govt. Print Off., 1948.
20. Fishbein, M. and Burgess, E. W. eds.—*Successful Marriage:* a modern guide to love, sex and family life. Doubleday and Co., 1947.
21. Grout, R. E.—*Health Teaching in Schools.* Saunders, 1948.
22. Hamilton, G.—*Psychotherapy in Child Guidance.* Columbia Univ., 1947.
23. Hammer, B. W.—*Dairy Bacteriology.* 3rd ed. Wiley, 1948.
24. Hartwell, S. W.—*Practical Psychiatry and Mental Hygiene.* McGraw-Hill, 1947.
25. Hayes, E. W.—*Tuberculosis As It Comes and Goes.* 2nd ed. Thomas, 1947.
26. Heardman, H.—*A Way to Natural Childbirth.* Livingstone, 1948.
27. Heidgerken, L. E.—*Teaching in Schools of Nursing, Principles and Methods.* Lippincott, 1946.
28. Hinsie, L. E.—*The Person in the Body*: an introduction to psychosomatic medicine. Norton and Co., 1945.
29. Holmes, G.—*Introduction to Clinical Neurology.* Williams and Wilkins, 1946.
30. Johns Hopkins Hospital—*Manual of Applied Nutrition.* 2nd ed. Johns Hopkins Hospital Press, 1946.
31. Kalinowsky, L. B. and Hoch, P. H.—*Shock Treatments and Other Somatic Procedures in Psychiatry.* Grune and Stratton, 1946.
32. Katz, S. ed.—*Freud: on War, Sex and Neurosis.* Arts and Science Pr., 1947.
33. Lewis, G. M. and Hopper, M. E.—*An Introduction to Medical Mycology.* 2nd ed. Year Book Publishers, 1948.
34. Lundberg, F. and Farnham—*Modern Woman:* the lost sex. Harper Bros., 1947.
35. Malmberg, C.—*140 Million Patients.* Reynal and Hitchcock, 1947.
36. Med. Clinics of North America—*Symposium on Endocrinology.* Jan., 1948. Saunders.
37. *Symposium on Diseases of the Digestive System.* March, 1948. Saunders.

38. *Symposium on Specific Methods of Treatment.* Sept., 1948. Saunders.
39. *Symposium on Gynecology and Obstetrics.* Dec., 1948. Saunders.
40. Marsh, E. L.—*Nursing Care in Chronic Diseases.* Lippincott, 1946.
41. Mesinger, W. C.—*Psychiatry, Its Evolution and Present Status.* Cornell Univ. Pr., 1948.
42. Menninger, W. C. and Leaf, M.—*You and Psychiatry.* Scribner, 1948.
43. Mettler, C. C. and F. A.—*History of Medicine.* Blakiston, 1947.
44. Miller, J. J.—*Your Teeth and How to Keep Them.* Lantern Press, 1947
45. Miller, W. S.—*The Lung.* 2nd ed. C. C. Thomas, 1947.
46. Mott, F. D.—*Rural Health and Medical Care.* McGraw-Hill, 1948.
47. National Found. for Infantile Paralysis—*Collected Papers of the Grantees,* vol. 7 (1946). National Found. for Infantile Paralysis.
48. Neilson, J. M.—*Textbook of Clinical Neurology.* Hoeber, 1946.
49. New York Academy of Medicine—*Medical Addenda,* related essays on medicine and the changing order. Commonwealth fd., 1947.
50. Odum, H. W.—*The Way of the South.* Macmillan, 1947.
51. Page, J. D.—*Abnormal Psychology*: a clinical approach to psychological deviants. McGraw-Hill, 1947.
52. Rennie, T. A. C. and Woodward, L. E.—*Mental Health in Modern Society.* Commonwealth fd., 1948.
53. Rivers, T. M.—*Viral and Rickettsial Infections of Man.* Lippincott, 1948.
54. Rockefeller Foundation, International Health Divsn.—*Collected Papers* (excellent reprints on malaria and other tropical diseases, v. 23, 1946. Rockefeller Found.
55. Rosen, G. et al—*400 Years of a Doctor's Life.* Schuman, 1947.
56. Rosenthal, H. et al—*Diabetic Care in Pictures.* Lippincott, 1946.
57. Saul, L. J.—*Emotional Maturity*: the development and dynamics of personality. Lippincott, 1947.
58. Schwartz, L. et al—*Occupational Diseases of the Skin.* 2nd. ed. Lea and Febiger, 1947.
59. Sherman, H. C.—*Food and Health.* Macmillan, 1948.
60. Shirley, H. F.—*Psychiatry for the Pediatrician.* Commonwealth fd., 1948.
61. Shepard, W. P.—*Essentials of Public Health.* Lippincott, 1948.
62. *Yearbook of Pediatrics.* Yearbook Pub., 1948.
63. *Yearbok of Dentistry.* Yearbook Pub., 1948.
64. Shryock, R. H.—*American Medical Research, Past and Present.* Commonwealth fd., 1947.
65. Spies, T. D. — *Rehabilitation Through Better* Nutrition. Saunders, 1947.
66. Stieglitz, E. D.—*The Second Forty Years.* Lippincott, 1946.
67. Stitt, E. R. et al—*Practical Bacteriology, Hematology and Parasitology.* Blakiston, 1948.
68. Taussig, H. B.—*Congenital Malformations of the Heart.* Commonwealth fd., 1947.
69. Todd, J. C. and Sanford, A. H.—*Clinical Diagnosis by Laboratory Methods.* Saunders, 1948.
70. Turner, D. F.—*Handbook of Diet Therapy.* University Chicago Press, 1947.
71. Venereal Disease Education Inst.—*Recent Advance in the Study of Venereal Diseases* (a symposium). VD Education Inst., 1948.
72. Willard, H. S. t al—*Principles of Occupational Therapy.* Lippincott, 1947.
73. Yost, E.—*American Women of Nursing.* Lippincott, 1947.
74. Osgood. E. E.—*A Textbook of Laboratory Diagnosis,* with clinical applications for practitioners and students. 3d ed. Blakiston, 1940.

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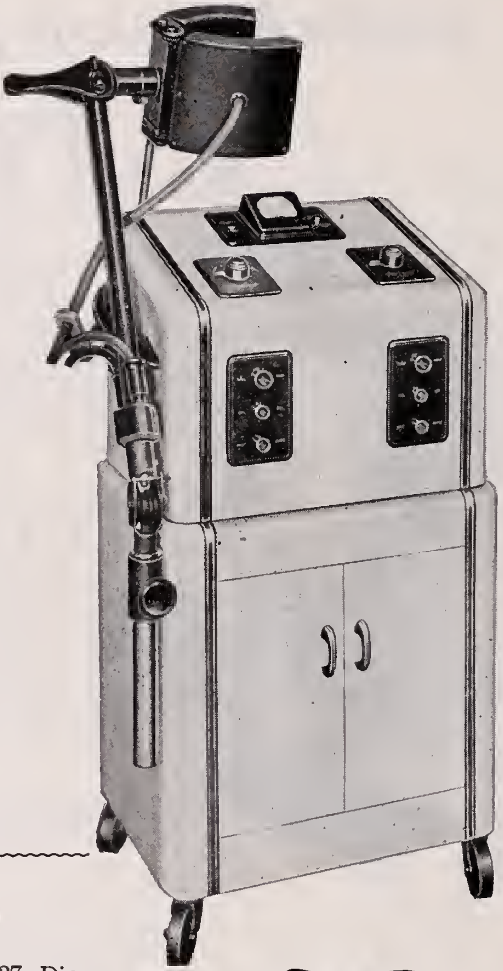

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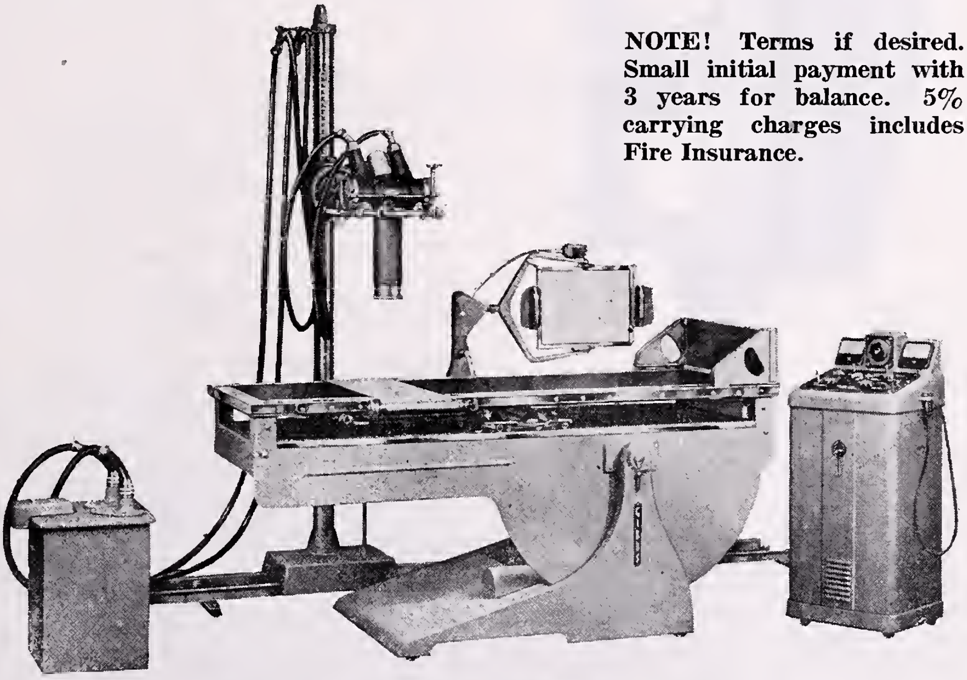

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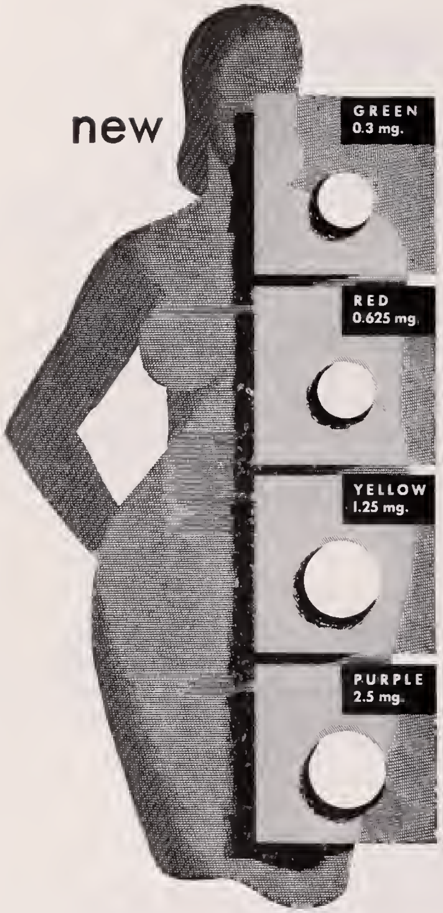

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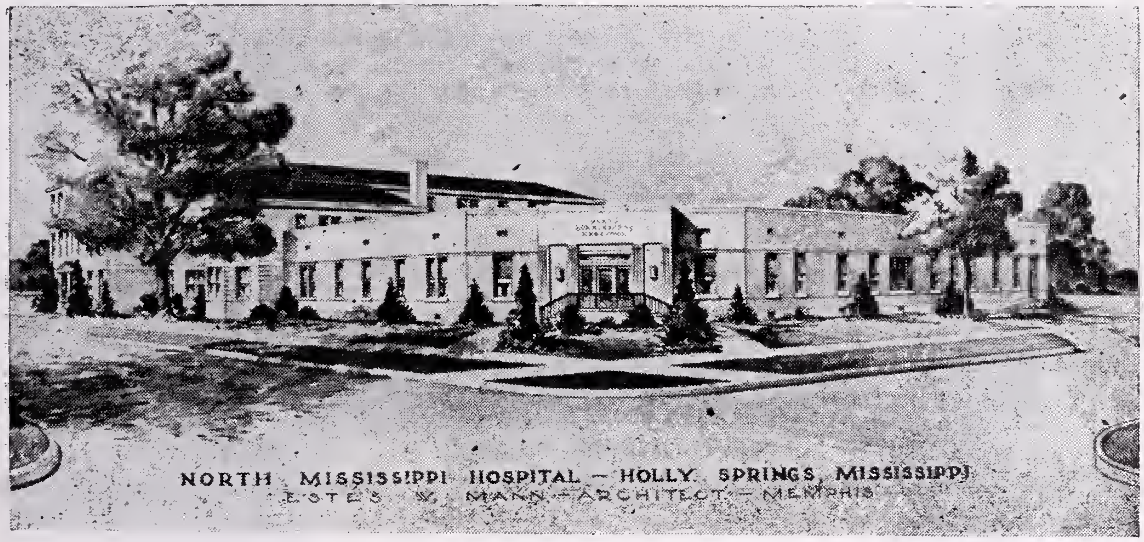
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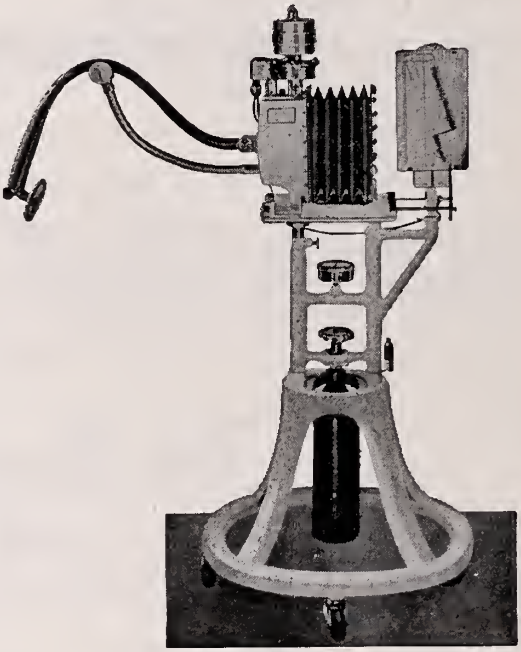

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BIBLIOGRAPHY: (1) Rutherford, R.N.: Am. J. Obst. & Gynec. 51:652, 1946. (2) Mason, L. W.: Am. J. Obst. & Gynec. 44:630, 1942.

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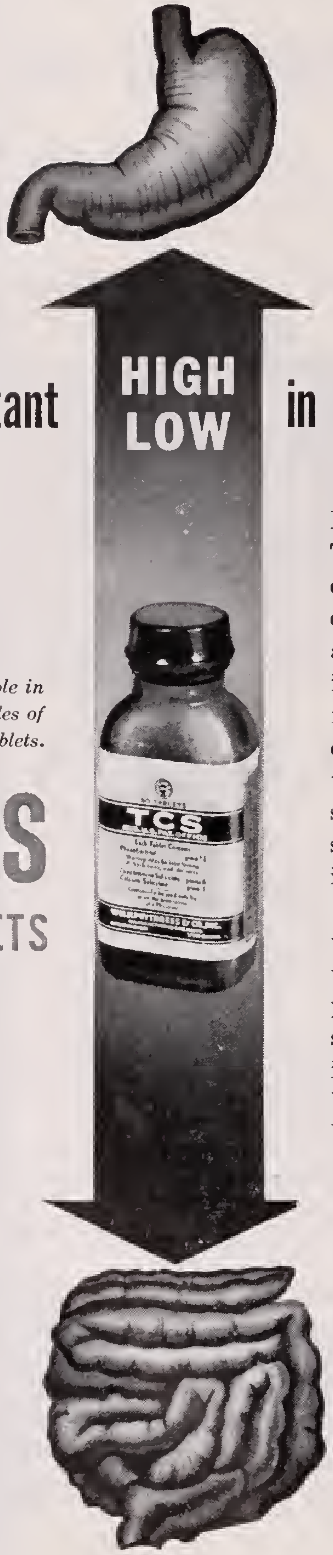

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Spasm of colon[2]
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Colitis[2]
Biliary dyskinesia

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Irritability
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Chorea
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Mania

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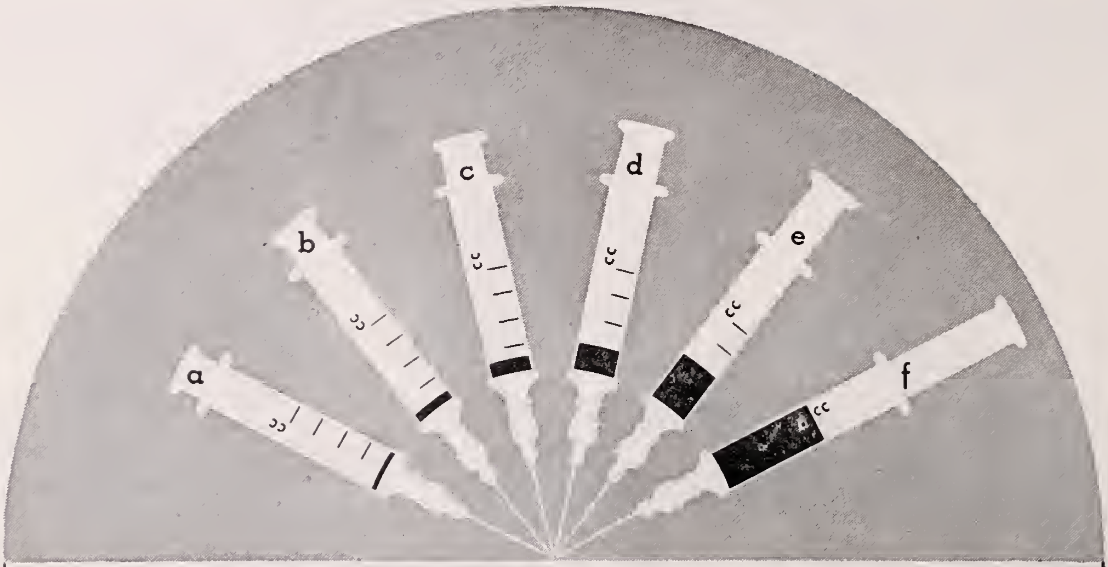

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Urogenital Tuberculosis*

ROBERT J. McCAFFERY, M.D., and ELMER HESS, M.D.
Erie, Pennsylvania

THE problem of the recognition of tuberculosis of the urogenital tract is one to be solved by those in close contact with the early case—namely, the private practitioner of general medicine. The active case of pulmonary tuberculosis is discovered and put under observation with relative frequency and ease. However, the mass chest x-ray surveys are of little value in the recognition of the early case of renal or genital tuberculosis. This is particularly unfortunate now since the new therapies have much to offer in the alleviation and arrest of urinary tract tuberculosis. We wish briefly to review those aspects of the diagnosis and treatment of the disease which will serve to aid the average physician in uncovering and combating this particularly insidious condition. We wish to allude to our experience in the antibiotic treatment of urinary tract tuberculosis. For purposes of clarity in discussion, the subject can be divided into:

1. Urinary tract tuberculosis—a) renal, b) ureteral, c) vesical, d) urethral.
2. Genital tract tuberculosis.

This division is patently artificial. Tuberculosis never attacks an isolated portion of the urogenital system. However, we believe it will serve the purpose of orderly discussion.

1. Urinary tract tuberculosis is rarely encountered as a primary disease. Its relationship to pulmonary tuberculosis is well known to all. Less well appreciated is its relationship to active or latent tuberculosis of extra-pulmonary focus, usually in lymph gland or bone. About one third of the cases of urinary tract disease will show pulmonary tuberculosis either active or latent. Braasch[1] found 30.7 per cent and Kretschmer[2], 35.5 per cent. Bell[3] in 115 cases of active renal tuberculosis found at autopsy reports 70 had active, 2 had latent, and 10 had healed tuberculous pulmonary lesions. The route of infection is practically always by blood stream, even though an extrarenal focus cannot always be demonstrated in lung, bone, or gland. Direct extension from one kidney to its fellow by way of bladder and ureteral continuity is a possible route, as is direct involvement of kidney and ureter by a contiguous psoas abscess.

We believe that the healed tuberculosis adenitis often seen in those who have ingested infected milk in childhood is the chief extrapulmonary focus for renal infection. The organism most probably lodged in the kidney before healing took place in the lymph glands.

Pathology of Renal Tuberculosis: A. Miliary Tuberculosis. The miliary abscess of the cortex is due to the lodgment of showers of bacterial emboli in the glomeruli of both kidneys. This is always associated with the same process elsewhere throughout the body and the victim seldom survives sufficiently long to develop urinary tract symptoms which are, of course, dependent upon invasion of the renal calyces. In the rare case, if the involvement has not been too great, due to small dosage of virulent organism from the primary focus, there may be healing of miliary tubercles of the kidney just as there may be such healing in the liver or spleen.

B. Caseo-cavernous Tuberculosis. Destructive lesions include the ulcerative and nodular varieties involving the cortex and the medulla. One or more papillae are involved in the ulcerative process, the organism gaining this locale either by direct tubular extension or via the blood stream bypassing the glomerulus. Extension of the process can probably go from the papillae to the base of the pyramid or from the cortex to the pyramid and papilla. With papillary involvement, the ulceration extends to the calyx and pelvis to the ureter. Obstruction of the ureter leads to pyonephrosis and destruction of the organ. Often the pyonephrosis becomes latent and partially calcified and the state of auto-nephrectomy may ensue. Healing is never complete in these cases.

Slide No. 1 C. S., 165855, admitted, 7-9-47.

This kidney measuring 15 x 8 x 3.5 cm. weighed 250 grams. It illustrates numerous areas varying from .5 to 1.0 cm. in diameter in the medulla of the organ. Most diagnostic is the presence of calcareous débris in the abscessed cavities communicating with the minor calyces.

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*Read at the meeting of the Mid-South Post-graduate Medical Assembly, Memphis, Tennessee, February 7 to 10, 1949.

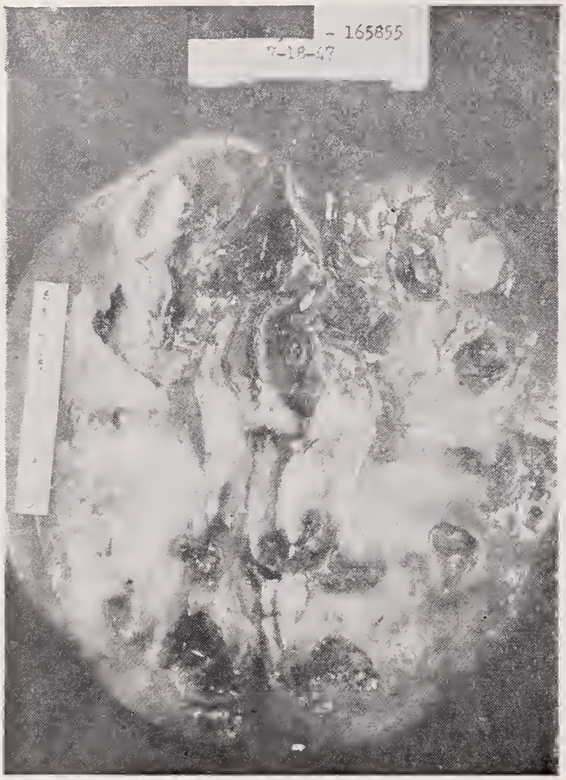

Fig. 1. No. 16855. Large tuberculous kidney. Many caseous areas in the medulla with calcareous debris in the cavities.

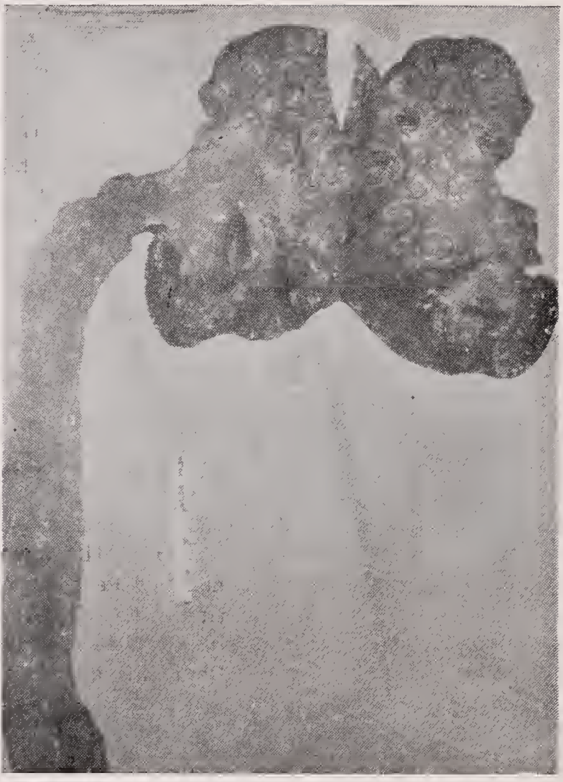

Fig. 3. No. 162754. Tuberculous abscess cavities in the lower pole. The ureter and renal pelvis thickened and dilated.

The escape of virulent organisms down the ureter causes involvement of the bladder mucosa even when there is little evidence of ureteral pathology. In other cases, the ureter is ulcerated, thickened, and shortened.

Slide No. 2. W. H., 162754 (1), admitted 1-23-47.

Tuberculosis of the right kidney, ureter, and bladder. This specimen shows the kidney and ureter removed at operation. The ureter and renal pelvis are greatly thickened and dilated. The changes in these structures are more striking than those in the kidney.

Slide No. 3. W.H., 162754 (2).

Same specimen as in slide 2. Graphically illustrates the amount of ureteral involvement which is present. Tuberculous abscess cavities are seen in the cortico-medullary areas of the lower pole. These were full of purulent and caseous debris.

The process in the bladder is early evidenced by the presence of minute tubercles and moderate congestion of the trigone. Later, there is ulceration and infiltration of the submucosa with a decrease in capacity and contracture of the bladder as the process extends into the muscularis.

Slides No. 4. F.L., 165249 (1), admitted 6-12-47.

Tuberculosis of the left kidney and bladder. This retrograde cystogram illustrates the extreme contracture of the bladder produced by long-standing tuberculosis. The patient, a 76-year-old male, voided every 20 minutes. This necessitated the carrying of a jug about his daily duties. He states he "got three blocks on a bladder-full."

Slide No. 5. F.L., 165249 (2).

This is the left kidney which was removed from the patient whose bladder shadow was seen in the previous slide (No. 4). There is dilatation of the pelvis and calyces and caseation necrosis scattered throughout the parenchyma in small circumscribed areas. Several abscess cavities enter the minor calyces.

The destructive process in the bladder is hastened by the onset of secondary pyogenic infection and the tuberculous nature of the cystitis may be masked. Late involvement of the urethra is featured by ulceration, stricture, and peri-urethral abscess.

Incidence of urinary tract infection by age indicates that the majority of cases occur between 20 and 50 years. Sex incidence is variously reported from no difference between sexes to as much as 2 to 1 increased incidence in the male. In our experience, the disease occurs slightly more often in the male.

Symptoms of urinary tract tuberculosis in the order of usual appearance are those due to bladder involvement. These are: (1) Frequency of urination day and night, featured by relative lack of pain. (2) Dysuria coming on as bladder neck and trigone become more inflamed. (3) Urgency which may blend into (4) Incontinence of urine. (5) Hematuria either microscopic or macroscopic which appears at some time during the disease and may in some cases be the sole early symptom. Pain in the area of the involved kidney is not a common complaint, and in rare instances, there may be a dull aching pain in the good kidney due to the enlargement of hypertrophy as it takes over the work of its destroyed fellow organ. The outstanding complaint is that of diurinal and nocturnal frequency. It should immediately alert the physician to the possibility of renal tuberculosis and suspicion should persist until the diagnosis is definitely proved. The finding of an acid, purulent urine in the presence of the above complaint demands a thorough urological examination.

Diagnosis of urinary tuberculosis is accomplished by: (1) History of complaints referable to the bladder or of pain of renal distribution. Past history of pulmonary tuberculosis or symptoms referable to the respiratory system such as pleurisy, chronic cough or loss of weight is suggestive. The story of ingestion of raw milk may sometimes be given. Previous surgery of the female genital tract may indicate the past presence of extra-pulmonary tuberculosis.

Slide No. 6. N.M. 156510—Admitted, 3-4-46. Age 54.

Retrograde urogram. Case of left and renal tuberculosis with involvement of the peri-renal lymph nodes; cystitis and left "golf-hole" ureter history aids the diagnosis. The patient has "pneumonia" followed by ten months in bed due to "fluid in the chest" at the age of 25 years. Had "bowel obstruction" without resection at the age of 32. Ectopic pregnancy at the age of 35. The story was suspicious of extra-renal tuberculosis.

Family history of tuberculosis is highly important.

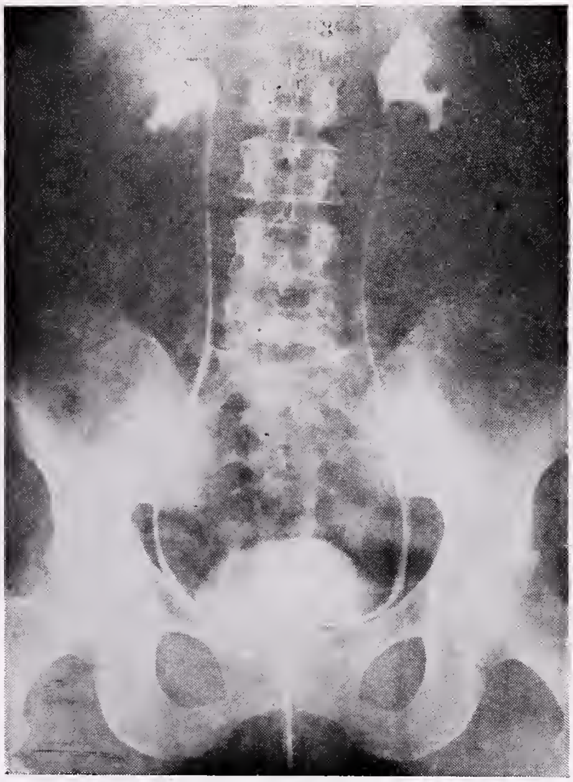

Fig. 6. No. 156510. Left renal tuberculosis. Patient had left "golf-hole" ureter and cystitis.

(2) Physical examination will often disclose presence of chest signs of the disease. It is well to remember that silico-tuberculosis may be the extra-renal focus in the more advanced age group of the male sex. All patients should have a chest x-ray. Evidence of past or present bone, joint, and glandular tenderness or enlargement is most important. Genital examination is particularly informative in the male.

(3) X-ray examination is invaluable in diagnosis of urinary disease. It is perhaps most reasonable to precede cystoscopy with excretory urography which of itself may definitely establish the diagnosis. The preliminary KUB film may disclose the presence of finely calcified tubercles in the renal cortex.

Slide No. 7. S. J., 162432—age 47—1-4-47—KUB—The right renal shadow shows an area of streaked calcific deposits overlying its middle. No other stone shadows are seen. Chief complaint was pain in the right lower quadrant of the abdomen for the past three weeks.

Rarely is the characteristic putty-line calcified mass of autonephrectomy seen. Presence of calcified mesenteric or pelvic lymph glands may be a clue to diagnosis of latent tuberculosis. The excretory urogram may show the motheaten distortion with pinching off of one or more calyces.

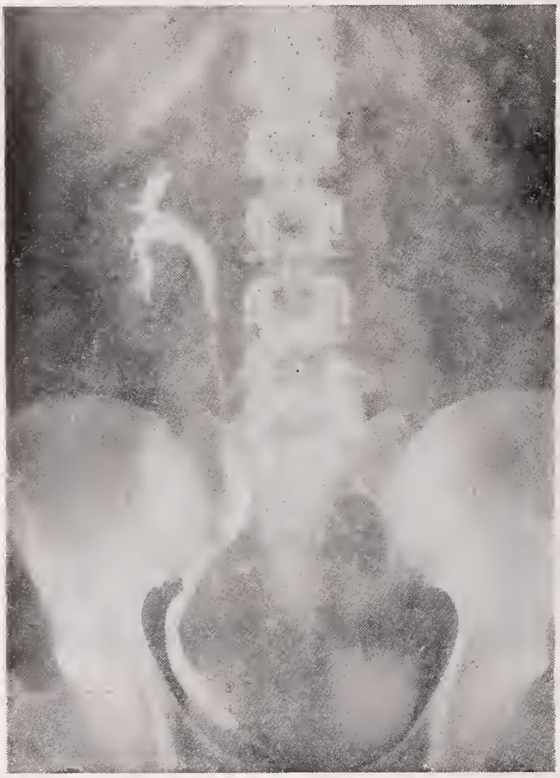

Fig. 8. No. 162432. Calcification surrounding the right middle calyces. Dilatation of the ureter with conical narrowing at the lower end.

Slide No. 8. S. J., 162432—same patient as Slide No. 7.

The right pyelogram shows dilatation of a small renal pelvis with clubbing of the infundibula. Most of the terminal calyces appear normal. Calcification surrounds the middle calyces. Ureterogram shows dilatation and conical narrowing at the lower end. Findings strongly suggest a tuberculous process.

Destruction of the calyces by abscess to give a characteristic sacculation is most common.

Slides 9 and 10. S. J., 162432—Right kidney from the same patient as slides 7 and 8. The organ weighed 108 grams. It shows caseation necrosis of hilar region with calcific changes in the abscess wall. The urine from this kidney showed many organisms.

(4) Final diagnosis of urinary tuberculosis is founded upon the finding of the organism in the urine. The search must be careful and continued. The organism does not appear in large numbers nor with any high degree of consistency. Smear, culture, and animal innoculation should all be done in an effort to detect its presence. The finding of the acid-fast smegma bacillus as a contaminant must be borne in mind when urine sediment is examined. This calls for care in collection of specimens particularly in the female.

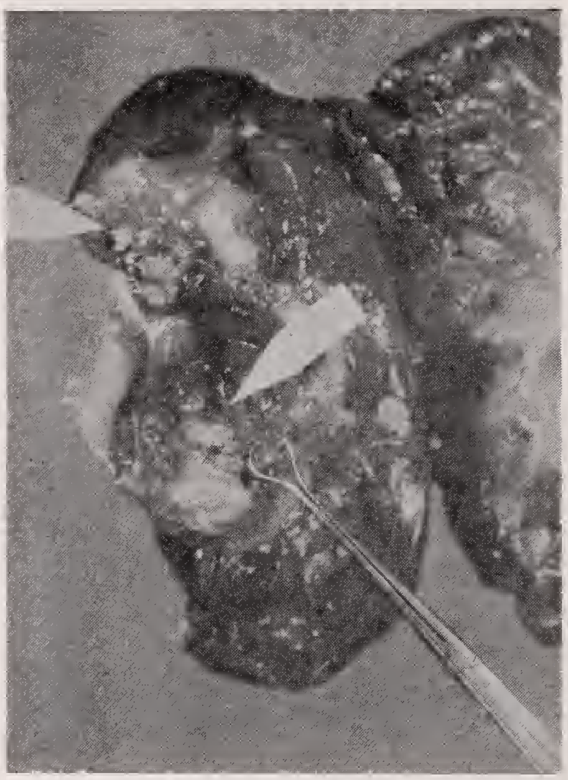

Fig. 9. No. 162432. Right kidney from same patient as Fig. 8. Caseation necrosis of hilar region with calcific changes in the abscess wall.

(5) Cystoscopy is a necessity in the absence of positive unilateral findings in the excretory urogram. Under these conditions, there is no other means of determining which is the involved kidney. The bladder findings will often be highly suggestive. There is reddening of the mucosa around one or both orifices and often tubercles can be detected clustering about the ureter. Patchy scarring and ulceration may be present on the trigone. In more advanced cases, there may be patency and rigidity of the ureteral orifice giving the so-called "golf-hole" ureter. In instances of protracted disease, the cystoscopic examination may be so painful as to require anaesthesia for its completion.

Altered function on the diseased side makes its presence known by variation in the excretion of dye—either PSP or indigo-carmine. The dye appearance time and concentration of the latter is a satisfactory index of renal function.

Ureteral catheterization is potentially dangerous in the presence of a highly infected bladder in that organisms may be carried to the relatively uninvolved kidney. Thorough washing of the bladder and the injection of water through the catheter as it is passed up the ureter may prevent cross infection. In cases of severe bladder infections, ureteral reflux may result in the finding of organisms in both ureters. If both ureters are catheterized, enough urine is collected for smear and culture, for both acid-fast and pyogenic bacteria. Relative susceptibility of the latter to penicillin and streptomycin is routinely determined. The presence of pus cells, red cells, and albumin in acid urine from one kidney is highly suggestive in the absence of bacteria on smear and culture.

Retrograde pyelography should be employed to confirm the suspicions engendered by cystoscopic and laboratory examinations. Also excretory urograms.

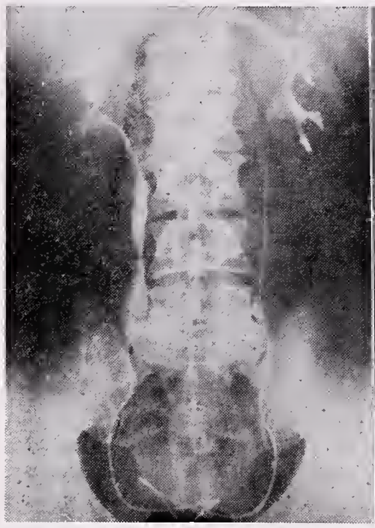

Fig. 12. No. 163023. The right renal shadow is somewhat lobulated. There is a gross irregularity of the right pelvis, lower and middle calyces. The upper calyces are dilated.

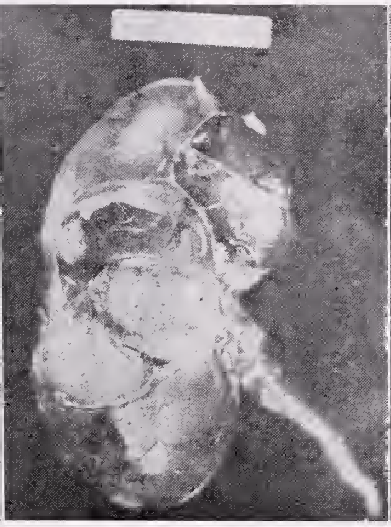

Fig. 13. No. 163023. Right kidney—Same as Fig. 12. Two large corresponding to abscess cavities extending into the middle and lower calyces.

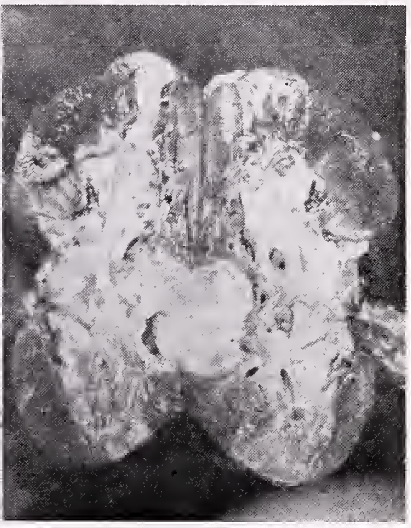

Fig. 14. No. 163023. Same case as Figures 12 and 13. Shows large calcified area in the renal pelvis.

Slides No. 11 and 12. R. H., No. 163023, 2-8-47. The right renal shadow is somewhat lobulated and shows a 3 cm. area of streaked and stripped calcification in its middle. There is gross irregularity of the pelvis, lower and middle calyces. The upper calyces are dilated. Findings strongly suggest right renal tuberculosis.

Treatment of urinary tuberculosis is either surgical or medical. When indicated, the surgical treatment is nephrectomy. The mere presence of kidney involvement confirmed by the finding of the causative agent in the urine is not sufficient indication for nephrectomy. Caseo-cavernous, unilateral tuberculosis in the absence of an active lesion elsewhere in the body presents the ideal indication for nephrectomy, promising lasting benefit to the patient.

Slides No. 13 and 14. R. H., No. 163023. Right kidney removed from the same case as slides 11 and 12. The kidney weighs 196 grams. There are two large yellow cystic areas on the surface corresponding to abscess cavities extending into the middle and lower calyces. A large mass of calcified material lies in the pelvis. In cases of bilateral disease, advanced on one side with minimal changes on the other, nephrectomy may add years to the patient's life and is thus often indicated. Mathe[4] stresses the need for dilatation of the remaining ureter to prevent or overcome subsequent stricture and secondary infected hydronephrosis. The bladder of the nephrectomized patient must be routinely checked by cystoscopy so that the course of the disease may be ascertained. In some instances, life may be made bearable by transplantation of the ureter to the sigmoid or abdomen in order to divert urine from a sclerosed and contracted bladder.

When it is determined preoperatively that the ureter is markedly involved in the disease process, the operation of choice is that of nephroureterectomy. More commonly it is necessary to remove only the upper ureter. The stump is tied and clamped and coagulated. A rubber tissue drain is placed over the stump and brought out through the lower end of the incision. It is rarely necessary to perform secondary operation for removal of the remaining lower ureter. (Hess[5]) The two-stage operation is preferable in the presence of perinephritic abscess. The initial drainage will answer the acute emergency and the kidney may be removed at a later operation. Nephrectomy is as yet the sole curative treatment for destructive unilateral renal lesions. Medical treatment alone is indicated in the face of active pulmonary pathology. Definitive surgery is postponed except for the emergencies.

The medical treatment of urinary tract tuberculosis has long been the same as that employed for tuberculosis elsewhere, that is, rest in bed. This is usually carried out in sanataria and in conjunction with heliotherapy. The course of treatment is usually long and expensive with results that have been far from successful. The need for a method of therapy which would produce a more rapid and certain clinical response seems to be at last answered in the current use of streptomycin. The bacteriostatic effect of the antibiotic upon M. Tuberculosis Hominus is now well-established. There is still considerable work to be done in the determination of a proper and adequate schedule of dosage which will serve to suppress the disease while sparing the patient the toxic sequelae of streptomycin therapy. The problem of inherent or acquired resistance in the organism to the drug is one that has yet to be solved. This is at present one of the limitations in the treatment of all forms of the disease with streptomycin. It is evident that more resistant strains may continue to grow during a course of therapy until in time all non-resistant strains have disappeared. Cultures will show growth of the streptomycin resistant bacteria. This phenomenon of developing resistance is seen in vitro and in vivo, coming on several weeks after treatment. It seems to develop almost independently of the dosage of the drug employed, be it one or two grams per day. This has implications which may be of value in the final determination of adequate dosage levels which will keep down the incidence of severe toxic reactions which are becoming more common during protracted courses of high dosage therapy.[6] Recent experimental work indicates that beneficial effects of streptomycin therapy may be obtained without forcing the dosage of the drug to the presently used toxic levels. It involves less frequency and total of dosage.[7]

Following the plan of therapy advocated by Slotkin[8], in which the effect of streptomycin upon M. Tuberculosis is potentiated by prior "softening" of the organism by chaulmoogra oil, we have had evidence of the salutatory effect of this treatment upon inoperable urinary tract tuberculosis. It is to be stressed that this treatment is not meant to replace presently accepted surgical attack upon unilateral renal tuberculosis nor the surgery of genital tract lesions. It is now reserved for those cases where surgery is not indicated such as early cases and inoperable cases. It is also used as an adjunct to surgery, in preparation and postoperative care of these patients.

The schedule of dosage is as follows:

Intramuscular injection of 1 cc. of moogrol (ethyl ester of hydnocarpus oil)* is given daily for a total of thirty-seven days. On the seventh day, 1 gram of streptomycin divided into eight doses is given. This is then continued for thirty days.

This regime results in the prompt relief of intractable urgency and frequency of urination and a remarkable improvement in the objective findings upon cystoscopy. In several of our cases, there has been a disappearance of the bacterium from the bladder urine coinciding with the alleviation of symptoms. Too short a time has elapsed in our cases to have definite information concerning the permanency of this apparent urinary sterilization. We have one instance where the organism did reappear upon subsequent examination. The patient exhibited marked evidence of eighth nerve damage, so we have hesitated to resume therapy.

A. L., File No. 162974, white female, age 47.

History of pulmonary tuberculosis discovered two years ago and pronounced to be arrested one year later. First seen when referred for study in October, 1946, because of pain in the right back. Retrograde done on 10-1-46 is seen in slide No. 15. Diagnosis of bilateral renal tuberculosis was made. Excretory urogram of

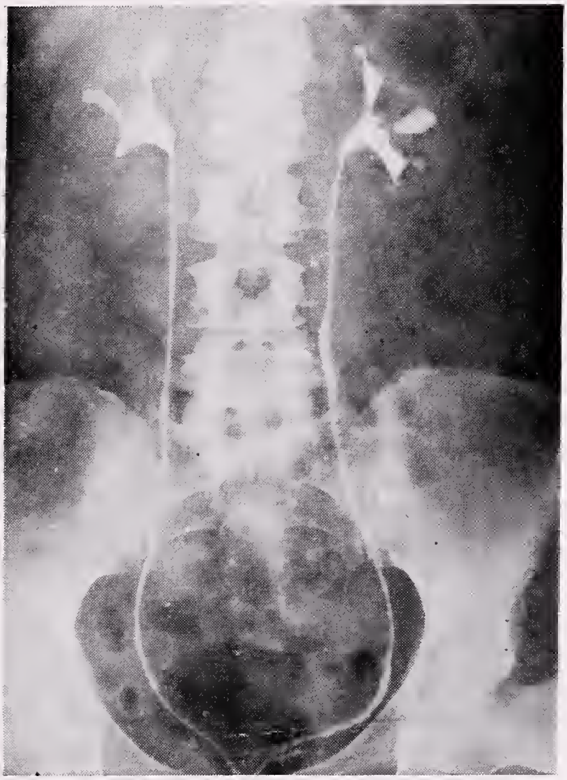

Fig. 17. No. 162974. Bilateral renal tuberculosis—right kidney—shows lobulation and calcification. Right middle calyx displaced upwards and the inferior calyx appears blocked.

10-5-46 (slide No. 16) showed the functional response to diodrast was adequate. The changes in the right kidney are fairly well advanced. There is lobulation and calcification due to a large tuberculous abscess. The patient was placed on rest and subjected to ultra violet therapy. On 2-5-47, she was restudied. Bladder urines were repeatedly positive for M. Tuberculosis. Retrograde pyelogram of 2-6-47 (slide No. 17) showed calcification of the lower pole on the right to be less striking. The middle calyx was displaced upward and the inferior calyx appeared blocked. The left pyelogram was unchanged. The régime of rest and ultra violet was continued. A recheck excretory urogram on 5-23-47 was largely unchanged from previous examinations. Urines were again positive for M. Tuberculosis. Frequency of urination was more marked. On 10-5-47, she was admitted for moogrol and streptomycin therapy. Excretory urograms done on 10-6-47 were reported essentially unchanged from previous examinations. On 10-8-47, cystoscopy showed the presence of bilaterally congested ureteral orifices with numerous small tuberculous ulcerations present around each and also over the trigone.

The patient had been given 1 cc. of moogrol daily for ten days before admission so streptomycin one gram a day was started on 10-8-47. The patient reported that her bladder pain was practically absent on 10-13-47 and never admitted bladder pain again during her hospital stay. The frequency had subsided and nocturia disappeared by 10-16-47. No acid-fast bacilli could be found in the urine during hospitalization. Cystoscopy on 10-24-47 showed remarkable subsidence of the cystitis. Complaint of vertigo and ataxic gait began on 10-28-47, twenty days after streptomycin was begun. The vertigo was less when the patient was kept in bed. The streptomycin was cut to .5 gram daily on 10-30-47, and because the disturbance in equilibrium became rapidly worse, the drug was stopped on 11-3-47. The condition of the bladder on 11-4-47 was remarkable in that no evidence of the previously seen ulcerative process could be seen. The vertigo was still severe, but at no time was there gross diminution of hearing. The patient was discharged on November 6, 1947.

Recheck cystoscopy on 12-10-47 showed a pseudomembranous trigonitis, but no evidence of tuberculous ulceration. The bladder specimen was reported to contain acid-fast bacilli resembling M. Tuberculosis. The vertigo was but slightly better. On December 19, 1947, excretory urogram (Slide 18) was reported as showing no essential change. The 24-hour urines of 12-22 to 12-24-47 were all positive for M. Tuberculosis. Ureteral catheterization done on 1-10-48 produced M. Tuberculosis in the right kidney urine. On February 12, 1948, the patient is again on rest therapy, but she has no bladder complaints. The vertigo is only noticed when she makes a quick turn. When it is remembered that this type of case faced a most hopeless outlook under past schemes of therapy, the result obtained is at least encouraging.

Use of streptomycin and moogrol in cases exhibiting concomitant extra-renal lesions is illustrated by the following:

Slides No. 19 and 20. E. M., 163574, white female, age 21, admitted 3-16-47. Excretory urogram showing tuberculosis of the left kidney and bladder, together with linear calcification indicative of psoas abscess. There is fusion of the 12th thoracic and first lumbar vertebral bodies. On 11-8-47, excretory urogram taken prior to treatment with moogrol and streptomycin: Bone graft is plainly seen. Function of the left kidney is reduced. Bladder symptoms were absent after one week of therapy with combined drugs. Use of the drug combination in the prevention of fistula following the incision and drainage of a tuberculous peri-urethral abscess is illustrated in this case:

J. R., 168777, white male, age 44, admitted 12-2-47 with complaint of swelling in the perineum of ten days duration. Under treatment for bilateral advanced pulmonary tuberculosis of three years duration. Also on diabetic diet for forty units of protomine zinc insulin daily. Peri-urethral abscess incised on 12-4-47. M. Tuberculosis was found in the contents of the urine. Moogrol, 1 cc. was started on 12-6-47. Streptomycin 1 gram daily was started on 12-13-47. Healing was complete on discharge 1-10-48.

Ambulatory patients can be handled by the present scheme of treatment and probably will be much more easily treated upon adoption of newer dosage schedules which seem to require less frequent injection of the streptomycin to obtain bacteriostasis, as referred to above.

Slides No. 21 and 22. B. R., 151452, white male, age 31, admitted 6-12-45—right renal tuberculosis with multiple tuberculous abscesses. Right nephrectomy done on 6-29-45. On 16 October, 1947, an excretory urogram done prior to treatment with moogrol and streptomycin. Symptoms of frequency and nocturia subsided in two weeks. The patient was treated on ambulatory status. 2-2-48—no recurrence of symptoms.

The drugs most certainly have given us a weapon in the alleviation of tuberculous urinary tract symptoms, and there is hope that with their use, a more radical attitude may be possible in the application of nephrectomy to a wider range of cases of bilateral renal involvement of cases now considered inoperable.

In the consideration of genital tract tuberculosis, we do not propose to enter the academic controversy as to whether the disease arises in the epididymis, (Barney[9]) or in the seminal vesicles and the prostate gland more often (Young[10]). The extent of involvement of the tract and the recognition of the process as presented by the individual patient is of prime importance to the general practitioner. Tuberculous seminal vesiculitis occurs as a single lesion more often than does epididymitis or prostatitis, but the commonest tuberculous lesions are certainly seminal vesiculitis, prostatitis, and epididymitis, and the latter is often bilateral. The organism reaches the seminal tract by (1) blood stream, (2) from the urethra. (a) infected urine. (b) direct extension, (3) by continuity of structure. Seminal tuberculosis is always secondary to tuberculosis elsewhere in the same manner that urinary tuberculosis is never the proved primary focus of infection. Pulmonary infection is predominantly the initial lesion even though the lung lesion may show no activity at the time the urogenital infection is manifested.

The early lesion in epididymitis usually is confined to the globus minor with complete obliteration of the lumen. It may later spread to the entire organ and to the testes. The latter is never primarily involved. Extension of the process from the epididymis to the adjacent scrotum with sinus formation results in the typical, easily diagnosed, tuberculous epididymitis. The process is that seen in tuberculosis elsewhere, namely, fibrosis and caseation leading to calcification or suppuration. The process is not usually bilateral within six months to one year of its onset and Hinmann[11] states that 16 per cent are bilateral when first seen.

The pathological process in the prostate and seminal visicles is the same as that in the epididymis, but there is more tendency to suppuration and abscess formation. One or both vesicles may be a mere abscess cavity. The vas deferens may be thickened or may be nodulated or "beaded." The testis is involved in late cases but it may escape even in severe infections of the epididymis. The process in the testis is caseation necrosis with destruction of the organ. In children below the age of puberty, the disease has been known to appear primarily in the testis. Genital tuberculosis is, however, as rare in early life as it is in the later decades. It usually occurs between 15 and 50.

Predisposition to genital tuberculosis is found in debilitated individuals and in those where there is local loss of resistance because of injury or antecedent acute pyogenic infection of the genital tract. However, very often genital tuberculosis is found in asthenic, well-nourished, vigorous individuals. Symptomatology is varied and dependent upon the absence or presence of urinary tract involvement. In the latter instance, frequency and urgency appear. Genital tuberculosis alone usually makes its presence known by the insidious, nodular, slightly painful enlargement of the epididymis. The pain may be referred to the spermatic cord and the palpable mass may be only slightly tender. In associated upper tract tuberculosis, the more indolent epididymal lesion may be overlooked. Mucopurulent urethral discharge in some instances is the presenting symptom. Rarely does the disease mimic acute purulent epididymitis. An abrupt onset with chill, fever, and malaise is accompanied by a greatly swollen and intensely tender epididymis. Subjective symptoms referable to the prostate and seminal vesicles usually are absent. The complaints in vesicoprostatic involvement are those induced by inflammation of the bladder and urethra, namely; frequency and urgency, hematuria, and pyuria. Painful or bloody ejaculation is rarely a symptom.

Diagnosis of genital tuberculosis depends primarily upon the development of a suspicious attitude by the physician toward all palpable masses in the epididymis. The usual insidious onset of a painless swelling in the globus minor demands a further search for systemic and urinary tract evidence of the disease. Likewise, such search is indicated in those apparently acute cases of epididymitis which fail to respond to the usual antipyogenic measures. A thickened irregular vas deferens or "beaded" vas is most suggestive, but it may be found in chronic B. Coli epididymitis. Adhesion of the epididymis to the scrotal fascia and skin with later formation of sinus tracts is usually certain evidence of tuberculosis of the seminal tract. Tuberculous orchitis is a late finding in contradistinction to luetic orchitis. In lues, the epididymitis alone is rarely involved. The findings in the prostate and seminal vesicles are those of chronic inflammation and are never diagnostic of tuberculosis. Stricture of the deep urethra may be found in advanced urogenital tuberculosis, but is not present in uncomplicated genital tract involvement. In summary, the diagnosis is based upon the progressive unremitting and often bilateral character of the lesion in the epididymis and vas.

Treatment up until the present has been that of surgical extirpation of the involved organs. This is usually done as advocated by Barney[9]—epididymovasectomy with ligation of the contra-lateral vas. A minority of urologists follow the teachings of Young[10], employing the radical resection of the entire seminal tract on the involved side together with a portion of the vas and the ampulla on the opposite side. If the disease is bilateral, the radical operation is done on both sides.

In the more common procedure of epididymovasectomy, there are many modifications having to do with the treatment of the suprascrotal vas deferens. All these procedures have the object of preventing extension of the process and prevention of fistulate but none materially alters the fundamental operative procedure which is as follows: (Cabot[12]) The skin of the scrotum and the inguinal area is prepared. An incision of two inches in length near the swelling and enlarged elliptically to include all skin areas involved in sinus opening which are to be removed with the epididymis. The tunica vaginalis is opened, adhesions to the testis carefully divided, and the organ delivered from the wound. Careful dissection staying close to the epididymis to preserve the vessels entering the testis posteriorly removes the epididymis and enables the vas to be separated up to the level of the external ring. The vas is clamped and ligated just above the epididymis and the ends carbolized. The upper end is guided with its clamp tip up and through the external ring to the internal ring. An incision is then made through the skin, fat, and external oblique down to the clamp tip. The vas is then withdrawn by another clamp and separated by finger dissection until as much as feasible is freed extraperitoneally. It is then clamped, ligated, cauterized, and dropped back into the abdomen. The inguinal wound is closed in layers. The scrotal wound is closed with drainage.

Cecil's[13] extrusion operation is used to advantage in cases showing large fluctuations or many external sinus tracts. In this, the uninvolved scrotum is dissected from the inflamed area and pushed up like a cuff exposing the epididymis and testis. The vas is brought out at the external inguinal ring and allowed to slough at the skin margin.

In any such procedure, it is useless to perform the vasoepididymectomy without first evaluating the degree of testicular involvement. In many instances, radical orchiectomy is the operation of choice. Small involved areas of testis will usually go on to suppuration and need removal later, if proper evaluation is not made in the original urological attack.

Sinus tract formation can at last be prevented in genital surgery by use of streptomycin therapy post-operatively. It is in this field that the drug has more than established its worth.

The following are interesting cases:

File No. 148571—Admitted, 12-26-44—Service, urological.

Name E. W.,—Age 30 years—Chief symptom—Drainage from scrotum six months duration. No pain. Physical—Three openings overlying the left epididymis. Right testicle removed. **Laboratory**—No urinary findings. **Operation**—Epididymovasectomy, 12-28-44. **Pathological**—Tuberculosis of the epididymis—caseation necrosis. **Result** — Discharged, 1-5-45—healing satisfactorily. **Remark**—Right nephrectomy for tuberculosis in 1942. Orchiectomy, right in 1942. The patient on rest therapy for one year. Case of urinary and genital tract involvement.

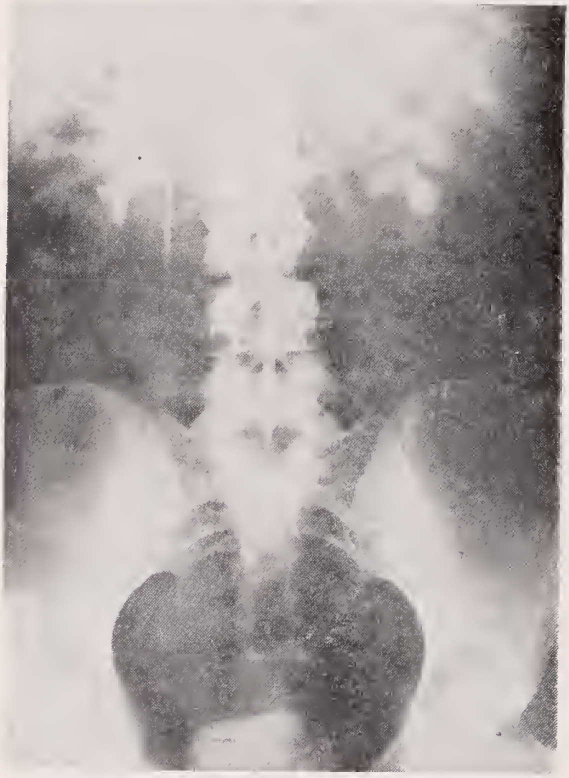

Fig. 20. No. 163574. Tuberculosis of left kidney together with linear calcification indicative of psoas abscess.

File No. 164514, admitted, 9-11-46—service—Urological. Name—B. W.—Age—34 years. **Chief symptoms:** Pain and swelling in the left testicle of two months duration. **Physical**—Scar on right scrotum, tenderness and swelling in the lower pole of the testis and epididymis. **Laboratory**—Acid-fast bacilli on September 20, 1946. September 23, 1946, September 29, 1946, and September 27, 1946 and September 30, 1946. **Operation**—October 21, 1946—Orchiectomy. **Pathological**—Tuberculosis of the epididymis and testicular tissue. **Result**—Improved on discharge, October 26, 1946 (five days post-operative). **Remark**—Admitted to Veterans' Hospital, January 6, 1947—treated by streptomycin but the drug was stopped because of toxicity. Seen on September, 1947—somewhat improved; on O.P. status at Veterans' Hospital. **Diagnosis**—Urinary tuberculosis, prostatic seminal vesiculitis, and epididymitis.

File No. 155218, admitted, 12-9-45, Name P. S., age 71 years. **Chief Symptoms**—Painful swelling of the right testicle for six months following transurethral resection of the prostate—gradually increasing in size with some leakage from the site of the vasoligation. **Physical**—The right testicle was heavy, enlarged, and tender. The scrotal skin was reddened. **Operation**—Right orchiectomy, 2-19-45. **Pathology**—Miliary and caseo-nodular tuberculosis of the epididymis and testicle. **Remark**—Followed ligation of vas for transurethral prostatectomy—x-ray, 12-17-47—Silicosis and changes due to infection. The patient had a temperature up to 100 degrees daily during his hospital stay. He was referred for treatment of lung condition.

E. B., File No. 143052, white female housewife, age 41, admitted 3-11-44. Had a left nephrectomy for tuberculosis.

Slide No. 23. Retrograde pyelogram, March 11, 1944.

The patient was followed in the out-patient clinic until September 16, 1947. She was admitted to the hospital for treatment by moogrol and streptomycin because of an active, ulcerative, tuberculous cystitis with involvement of the remaining kidney.

Slide No. 24. September 16, 1947. Urogram. This patient died of an anaphylactic reaction characterized by an exfoliative dermatitis due to streptomycin. A full report of this case is being prepared for the literature.

Summary:

(1) Urogenital tract tuberculosis has been discussed from the standpoint of its interest to the average physician who is not a urologist. Points in symptomatology, diagnosis, and treatment have been reviewed.

(2) A few of our experiences with the new therapy of moogrol and streptomycin have been briefly presented. It must be pointed out that this work is still to be considered in the experimental stage.

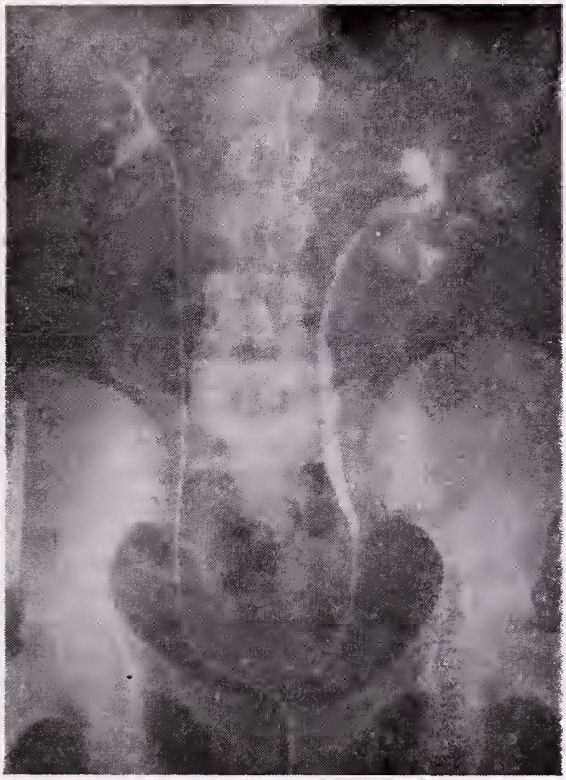

Fig. 23. No. 143052. Tuberculosis. Left kidney and ureter. March, 1944.

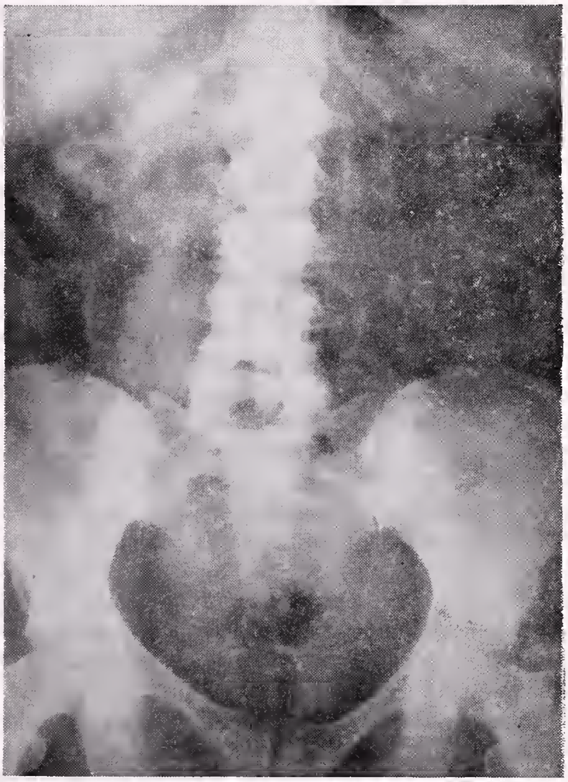

Fig. 24. No. 143052. Same case as Fig. 23. Urogram —September, 1947. Active ulcerating tuberculosis of remaining right kidney.

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A Neglected Phase in the Treatment of Duodenal Ulcer*

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In presenting this paper today I should like to say at the outset that I am presenting no new developments nor any new knowledge in the field of management of peptic ulcer. I have, however, a definite reason for bringing this subject to your attention rather than attempting at this time to present something in the way of original clinical investigation or a discussion of some new development in the clinical field. My reason for presenting this paper is simply this: Since the introduction of the vagotomy procedure by Dragstedt several years ago, there has been a great interest in and a great discussion of the surgery of peptic ulcer. Scarcely any medical meeting of any importance in the last several years has failed to have one or more papers dealing with the subject of vagotomy or of subtotal and total gastrectomies.

I would not for one minute minimize the contribution that the surgical investigators have made in the treatment of this disease nor do I wish to embroil myself in any of the controversy at the moment concerning these various surgical procedures.

My basic viewpoint, however, as to duodenal ulcer is that it is a medical problem. Further when it becomes necessary, as it sometimes does, to submit a patient with duodenal ulcer to surgery, that surgery becomes necessary because a medical man somewhere has failed in his job. I wish to bring to your attention today the point on which I think we most often fail. We fail on this point not because we do not know about it, not because it is beyond our ability to cope with, not because it is a phase which requires expensive equipment or laborious laboratory procedures, but unfortunately because it is a phase which is very time-consuming and I might add further, very taxing on the patience of the doctor. I am speaking about the psychosomatic side of the etiology of duodenal ulcer and the matter of psychotherapy in the treatment of this disorder.

In the years that have passed various theories have been presented at one time or another in regard to the etiology of duodenal ulcer. As the years have rolled along, however, it has become increasingly apparent that ulcer is primarily a disease of a certain type of individual, a tense, hyperkinetic, usually thin, angular person; and, that in such an individual his ulcer is most apt to flare in a period of either physical fatigue or mental or nervous strain. I think at this time probably most workers in the field of gastro-enterology would concede that the central nervous system must play some part in the etiology of ulcer. As a brief summary of the etiological factors of peptic ulcer I quote from my old preceptor and friend, Dr. Walter Palmer of the University of Chicago, "The factors responsible probably include lack of cellular resistance, an insufficient secretion of mucus, or excessive acid gastric juice, particularly during the night and during the fasting periods when the normal stomach secretes very little acid. The central nervous system through the vagus may produce hypermobility and quantitative hypersecretion. Emotional factors may play a most important role, for Wolf and Wolff have demonstrated beautifully the response of the stomach to various psychologic states. It is premature, however, to conclude that peptic ulcer is a purely psychosomatic disorder."

I agree with Dr. Palmer that it is still premature to regard peptic ulcer as purely a psychomatic disorder. It is my own feeling, however, that it is largely a psychosomatic disorder and as we gather further evidence over the years it grows more conclusive. In any event I doubt if very many of you today will disagree with me on the point that nervous and mental factors play a tremendously important part in the etiology of peptic ulcer and by the same token, attention to the mental and nervous angle must therefore be a major consideration in the treatment of ulcer.

The chairman in his address before this body lamented the passing of the general practitioner type of family doctor. This phase in the management of peptic ulcer about which I am talking today calls for the family doctor type of treatment. In scientific language we speak of it as psychotherapy. In the language of the family doctor we speak of it as the art of medicine. In dealing with the patient with peptic ulcer if we are to learn what the particular stresses and strains are that are playing on his central nervous system, we must know something of his business, social and family situation. It would be a rare patient indeed who would give the essential facts and intimate facts of these various situations to a doctor the first time he saw him. It so happens, however, that in the process of properly studying a case of gastro-intestinal disorder that several visits are necessary for the routine laboratory and x-ray procedures. If attention is given to the matter of firmly establishing a patient's confidence in the doctor on these various trips to the office, laboratory, and x-ray room, it is frequently possible in the final interview when the results are summarized for the patient to learn some of the details of the patient's background that will allow the physician to analyze properly what his stresses and strains are. Sometimes, however, it is not until the patient has been coming to see the doctor on his followup visits that the truth is finally obtained in these matters. It is this groping in the dark that so frequently taxes the doctor's patience, the time consumed in these repeated interviews to get to the basic facts, that I referred to at the outset.

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*Read before the Section on Medicine at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

I think that Weiss and English in their book on psychosomatic medicine in dealing with peptic ulcer deal too much with the sexual factor, and the marital factor as the problem in duodenal ulcer. This, of course, is one of the most prominent of the stresses and strains that all of us see in our practice. There are other factors, however, than these which play a part and these will be illustrated in the few brief case reports that I shall present. The ones I am presenting will demonstrate successful though simple psychotherapy. There are many other cases from my files that I might quote where I have been anything but successful in this matter of psychotherapy.

Case No. I: Mrs. M. C. L., housewife, age 23. History was that since the birth of her baby two months previously she had had marked pain in the shoulders, in the back, and in the lower chest. She stated that she frequently had heartburn and gaseous distention in the epigastrium, but there was no cleancut time relationship to food taking. She stated that she was chronically constipated and had been taking various laxatives every night. Without going into all the details of the history, I felt that her complaints were largely functional, but I did a G. I. workup on her as much for psychotherapeutic purposes as anything else. I was quite surprised to find a definite duodenal ulcer with demonstrable crater and she was promptly placed on the usual routine management. In the course of several interviews during her workup, it developed that she had a perfectly happy married life, and that she had a relatively uneventful pregnancy and easy delivery. All of her symptoms, however, dated from the birth of the baby. It developed that she was living in an apartment in the home of a middle aged woman. This woman had been extremely thoughtful of this patient as a young bride, had been very kind to her, had done many things for her that are not usually expected of a landlady, and had been very kind to her during her pregnancy. However, with the return of the baby from the hospital the woman's attitude changed completely. She told the couple that they would have to move, and as some women seem particularly gifted at doing, had done as many little things as possible to make life miserable for this patient. Her husband was called in and I advised him that while he was looking for an apartment, to move his wife immediately either to his or her parents, whichever seemed to be the most feasible. She went to stay with her husband's mother where she remained three weeks before a home was located. During these three rather pleasant weeks with her mother-in-law she was entirely free of symptoms, gained in weight and progressed satisfactorily. She has had two checkup G.I. series since her original period of treatment and so far as I am able to tell her ulcer has healed without deformity and she has had no subsequent difficulty.

Case No. II: Mrs. J. H., age 25, housewife and telephone operator. She gave a history of a burning epigastric distress relieved by food taking and alkali. Gastro-intestinal series showed definite bulb deformity and there was marked tenderness over the bulb on fluoroscopy. At the time of her study she was very obviously a tense, apprehensive individual. For financial reasons I did not admit her to the hospital and advised her to remain away from work at home at rest for several weeks during the first part of her management. On routine ulcer management at rest at home, she became perfectly comfortable in a matter of about two days, and remained entirely free of symptoms. Advising her to remain on a three-meal type of management with a modified between meal schedule, I allowed her to return to work. In a very few days she returned to the office complaining of her ulcer symptoms all over again.

I had previously quizzed this patient on her family life and social background with negative results. However, upon inquiring into her work situation when she returned, I found that while she had been a telephone operator for several years and had enjoyed her work, recently there had been a change in supervisors, and that she and a number of the other operators were having a difficult time at their work. I then did what I always hesitate to do, namely, advised her to resign her position though she had been with the telephone company for some time. Since she has been away from work she has been ambulatory and has been free of ulcer distress. Checkup G.I. series done since has revealed no evidence of ulcer activity, the only evidence of the previous ulcer being a slightly flattened bulb.

Case No. III: C.W.C., age 48, merchant. This patient's history of ulcer dated back twenty-one years when the diagnosis was established by x-ray examination and treatment instituted. All during these twenty-one years he had had exacerbations and remission of fairly typical ulcer distress. In most of these exacerbations he had placed himself for a short time on a modified ulcer management without consulting a physician and the symptoms had subsided. During the several weeks prior to his first visit to me he had been having fairly typical ulcer distress, but in addition complained of rather marked epigastric fullness. On the G.I. series the duodenal bulb was rather badly deformed as might be expected and on his four-hour film he had between a twenty and thirty per cent retention of barium. I told my surgical associate that day that I had a potential vagotomy for him. This patient was placed in the hospital on rather strict management. In twenty-four hours he was free of distress and remained free of distress until his discharge at the end of two weeks. He was discharged to follow the usual management. He remained fairly free of distress for several months. His ulcer distress began to flare, however, during the first part of December coinciding with the Christmas rush at the store. It subsided somewhat in the week between Christmas and New Year's with a flare again around the first of the year. During the next few weeks in spite of rest at home and a very strict management, his distress continued. His retention which had disappeared within six weeks after his being placed on management had recurred and in spite of all efforts he was going rapidly downhill. It was not, however, until during this period of recurrence and rapid downhill progress that I learned what I considered a very essential detail in his life, namely, that he was being disturbed by frequent bickerings between his wife and daughter so that rest at home for him was next to impossible. I decided to send him at this time out of town to a confrère in another city to get him away from his home situation for a while, and also for the matter of consultation in reference to surgery as he was desirous of operation. Within forty-eight hours after leaving town and entering the hospital he was free of symptoms and remained free of symptoms during his entire stay there. I might add he was kept in the hospital there a week longer than intended to wait until his daughted had departed for college. Since that time he has remained free of distress and is at work every day. He no longer has any retention. Meanwhile the situation has been explained as tactfully as possible to his wife in the hope that when the daughter does return from college for summer vacation that the home situation will be somewhat rectified. This man may again for some other reason develop recurrence of his symptoms and may have yet to be submitted to surgery, but certainly since mid January his progress has been highly satisfactory.

I am sorry that time will not permit of additional case reports or of more lengthy case reports in which the situation is much more complex than in these simple cases which I have presented. I would emphasize again in closing the importance of learning what factors are contributing to a patient's nervous tension state and in attempting to give the patient an insight into the relationship between these factors and his disease, and further in making a determined attempt to help the patient to free himself of these stresses and strains.

I apologize for not bringing you something new in the clinical field. I cannot apologize, however, for making a plea for what I conceive to be a very essential part of good medical practice.

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Discussion

L. T. Carl (Jackson)—A few months ago I had to prepare a talk on the treatment of peptic ulcer, and I find that when the psychosomatic phase of the treatment of peptic ulcer was arrived at and the following paragraph was written: "It is well known that peptic ulcer is a psychosomatic type of condition in a great percentage of cases. One can say more about the psychosomatic phase of the treatment of peptic ulcer than can usually be done about it. Quite often patients with peptic ulcer who show a psychosomatic factor are in no condition to remedy the psychic factors which aggravate their ulcers. Many of them are caught in a web, often of their own making of such things as business difficulties and ambitions, professional obligations, family obligations and difficulties. These things are not easily remedied. These patients should be given as much insight into the possible importance of such factors as these, but that is usually about as far as one can go. Those with deep seated psychic or personality problems probably cannot be handled by their family doctor satisfactorily and would require psychiatric treatment. Unfortunately a psychiatrist is quite often not available and one would have difficulty in inducing the average peptic ulcer case to undergo psychiatric therapy. The problem probably devolves finally upon the shoulders of the patient's private physician who has had the opportunity in many cases of knowing the patient intimately for years and who can be very helpful in advice as to the ordering of the patient's life, his habits and recreation, etc. This may be taking too futile a view of the value of psychiatric and psychosomatic treatment, but I believe it is essentially true."

I find that Dr. McClanahan agrees with this. I do not wish to minimize the value of psychotherapy where it is indicated or available. However, the average peptic ulcer sufferer does not require psychiatric treatment, and it then becomes the duty of his physician to assist him to see the psychosomatic factors in his case. Quite often this can be readily done if the patient's intelligence and insight are sufficient. However, I think that often it is discouraging to be able to point out to a patient the source of his emotional difficulties and not be able to remedy the situation for him. The cases Dr. McClanahan has enumerated were fortunate in being able to modify their situation. However, I imagine he could have cited cases more numerous in number where this was not possible. One can easily imagine such situations, such as professional life and obligations which cannot be changed or gotten out of, financial difficulties, worries about family, marital infelicity and countless others. However, even if they cannot be changed, I believe if the patient can see their importance and in some degree buffer himself against their trauma, something will be accomplished. I agree with Dr. McClanahan that this is probably the most neglected phase of the treatment of peptic ulcer, and again primarily because we do not take the interest and the time necessary first to find out the difficulties and second to assist the patient to understand and cope with them.

Vagotomy may owe the greatest part of its benefit to the fact that it shields the stomach from the influence of emotional stimuli. In a comment by Dr. W. D. Andres of an article by Moore, et al., in the March 15 issue of the **Journal of the American Medical Association,** he tells of a case of carcinoma of the esophagus. Due to obstruction it was found necessary to do a gastrostomy. On subsequent exploration of the thorax it was found that the tumor was inoperable and a vagotomy was done. He had the opportunity under direct vision to note the effect of emotion, particularly resentment on the mucosa of the stomach. Prior to vagotomy it had been found that such circumstances there was a pronounced vascular response in the stomach which could be measured as to degree on a color scale. Following operation on the vagi it was found that although resentment and emotion continued to cause flushing of the face and other evidence of emotional response, there was no production of any color change in the mucosa of the stomach. It is stated that secretory changes in the stomach have a tendency to return toward normal change over a period of six to twelve months although some reduction in acidity may persist. Moore in the article just mentioned made the interesting statement that the response to insulin-induced hypoglycemia remained abolished in all of their patients except one. However, this one was benefited in that prior to operation any sort of difficulty in his business had caused stomach symptoms. After surgery he had no difficulty under such circumstances. This was taken to mean that the connection between the cerebral cortex and the gastric mucosa had been effectively abolished. Moore maintains that although secretory and motor changes in the stomach return to the postoperative level that effective severance of the main neurogenic pathway between the brain and stomach still persists. He draws the conclusion that probably the most lasting benefit of vagotomy is this disconnection of the cerebral cortex and the gastric mucosa which would render the stomach mucosa less liable to psychic trauma. We mention all of this because we think it is evidence of the fact that psychosomatic factors and psychic trauma is probably one of the most, if not the most, important factor in the production and perpetuation and recurrence of peptic ulcer.

J. F. Lewis (Columbus)—My main comment on Dr. McClanahan's paper is "amen." I think he has stated gospel truth and that very much to be point. I can state some random thoughts on the subject, and some off the subject, perhaps, but I cannot improve on what he has said and illustrated so well.

To reach down into that venerable medical waste-basket containing the diseases of unknown etiology—the so-called idiopathic diseases—and to pull out such an ancient and respectable disease as peptic ulcer, and then place it in the group of psychosomatic diseases—those of psychogenic etiology—may seem somewhat sacrilegious. Indeed, it may be in a way, just adding insult to injury. Yet that is what has happened in the past few years and I believe that a great deal of good may come of it. The same things might be said for some of the other diseases that are nowadays being so actively considered, and discussed from the psychosomatic viewpoint — hypertension, diabetes, arthritis, hyperthyroidism, chronic ulcerative colitis, and so on, as well as the more simple functional disturbances such as nervous indigestion, constipation, "neuro-circulatory asthenia" and other bodily expressions of acute or chronic anxiety and tension.

While no definite marked change is indicated in our usual methods of handling these diseases in general, and this disease (peptic ulcer) in particular, yet a more general realization of the etiological factors of emotional conflicts and strain will definitely help us to handle these cases more wisely, first and last. We cannot offer always psychotherapy or guidance in sufficient amount to cure our patients in a hurry, yet we medical men do use psychotherapy every day. We may not call it that, but we do it. We may be using unfamiliar terminology (psychogenic—emotionally determined; psychosomatic—psychophysical) but I believe we are getting back closer to the old family doctor approach to ailments all the time.

When we uncover, or sense, certain situational factors in the background, we do not have to immediately point out a solution to them. We cannot always induce a patient to alter his situation—indeed, it is often impossible or undesirable for him to make drastic changes—it might involve breaking up a family or losing out in business; but we can let the patient gradually come to look upon the psychogenic factors in his illness for himself; he will tolerate this better than he would our telling him directly that such factors are causing his illness and he can gradually make up his own mind about what changes he will make to help him get straightened out. The same is true of any psychosomatic disorder.

Of course, we still treat peptic ulcer medically by diet (including protein digests), antacids, antispasmodics, etc., and surgically when definitely indicated, but we are learning that such alone is not adequate without consideration of the emotional factors in the illness. Also, we repeatedly impress upon the patient his need for frequent feedings during times when he is under unusual emotional stress, even after his ulcer is cured. Alvarez stresses this to help prevent recurrences of ulcer. The main need of the person with ulcer or the tendency to ulcer, is to keep food in his stomach, and the exact kind of food is probably of secondary importance.

W. H. Frizell (Brookhaven)—Dr. Clanahan offered an apology for not having presented anything new, but I think he is due our thanks for uncovering what we perhaps have not uncovered; we did not have sense enough to see the real facts for hunting for something big. As we grow older and gain in knowledge, we realize what we probably did not know in our younger days—that there is something else in medicine other than surgery; surgery is glamorous and attractive to the young man, too attractive, perhaps; he does a great deal of surgery and then when he gets ready to practice medicine, like many of the rest of us, he has passed off the scene. If we could study the common mind and the individual case, we could control these diseases much better. It is better to prevent the necessity of surgery whenever it is possible. Dr. Mc-

Clanahan's exposition of this subject did me good. I am glad to see the return of these diseases back to their proper field—that is, psychomatic treatment. I am sure that our thanks are due Dr. McClanahan for this fine presentation and just on the eve of the formation of the Academy of General Practitioners, I think the paper most timely.

The Program of Clinical Laboratory Service of the Mississippi State Board of Health*

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From personal observations and requests, both verbal and written from hospital administrators and physicians of the state, it was realized that the clinical laboratory diagnostic facilities available in the hospitals and clinics were in real need of assistance in solving many of their laboratory problems. Sporadic attempts were made from time to time by the State Hygienic Laboratory to assist them by loaning them technicians for short periods, and by advising with the respective administrators concerning specific problems. This method of assistance, although of value, failed to accomplish the hoped for results because of the lack of continuity of service due to the inability of the state to employ a sufficient number of trained technicians to carry on the routine work of the State Hygienic Laboratory and furnish advisory and relief laboratory service to the clinics and hospitals. The situation was discussed from time to time with the executive officer of the State Board of Health and representatives of foundations that visited the state and supported other activities of the State Board of Health. The real need for continuous advisory clinical laboratory service to the physicians and hospitals was emphasized. It was also pointed out that a relief laboratory service supplemented by refresher courses for local technicians would be a real asset to the service by stimulating the interest of the local technicians in improving their techniques in use as well as in learning new procedures. Finally in the summer of 1941 a representative of the Commonwealth Fund of New York became convinced that such a program gave promise of rendering a worthwhile service in improving the medical and hospital care of the people of Mississippi. The Commonwealth Fund had spent more than one million dollars on medical, nursing, and public health education for citizens of the state of Mississippi, therefore, their representative was convinced of the need for this additional scientific service to strengthen the other programs of education which they had sponsored. As a result a coöperative project was presented to the Commonwealth Fund and the State Board of Health to cover a five-year period. A justifying brief was submitted to the board of directors of the Commonwealth Fund and the State Board of Health. A budget for one year was prepared and submitted to the board of directors and the State Board of Health. The budget and project were approved by the two agencies. The budget provided for an advisory technician, a relief technician, and scholarships for local technicians who were recommended by the advisory technician.

On January 1, 1943, an advisory technician who had previously been especially trained for the service as adviser and instructor was employed. Her services were made available immediately to the hospitals and physicians of the state. Her reception by the hospitals and physicians was most gratifying. On September 16, 1942, as an extension to the service, an additional technician was employed, and arrangements made for local hospital and clinic technicians to receive additional formal training in clinical laboratory procedures by offering refresher courses of four weeks' duration. Provision for the refresher courses was made with the Department of Clinical Pathology of the Tulane Medical School. The program of training was carried on through this school until December 31, 1943. The demands made on the teaching staff of the Medical School, due to the war effort, made it necessary to find facilities elsewhere for offering the refresher courses.

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*Read before the Section on Public Health and Hygiene at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

We were fortunate in having in our own state a hospital laboratory approved by the American Medical Association and the American Hospital Association for training technicians. Arrangements were made to transfer the formal training activities from Tulane to the laboratories of the Mercy Hospital at Vicksburg on January 1, 1944. This arrangement has continued to our complete satisfaction.

During the four weeks' absence of the local technician who is taking the refresher course, the relief technician is detailed to the local laboratory without cost to render laboratory service. The tuition and travel expenses for the local technician are paid by the Commonwealth Fund or the State Board of Health. The award of the four weeks' refresher course is based on the recommendation of the advisory technician who has previously visited the local laboratory and worked with the technician in her own environment.

In rendering this advisory and relief laboratory service it has never been the policy to in any way leave the impression that an attempt at supervision was contemplated. We realized from the very beginning that many technicians were ill equipped for performing dependable laboratory service, due to their limited opportunities for proper training and for lack of essential scientific equipment and supplies. We feel that the best policy is to work to improve what you have so far as the technician is concerned, replacing her with a more efficiently trained person should she resign. She should be assisted in selecting essential scientific equipment and supplies for performing laboratory procedures required and encourage the responsible administrators to purchase essentials only, as complicated scientific equipment which is not understood by a technician will only add to her confusion in attempting to use equipment with which she is not familiar.

More than three hundred visits to hospital laboratories and physicians' clinic laboratories have been made since the inception of the program, the visits being from one hour in duration to as long as two weeks.

More than fifty technicians have been given the advantage of the four weeks refresher course.

An additional program of extending the service for the special benefit of maternity cases and surgical cases who may require transfusions is being developed. This program will assist local technicians in performing properly blood group determinations, cross-matching techniques and Rh factor determinations with sensitivity tests between the blood cells of the donor and the serum of the recipient when the recipient is Rh negative.

These services are available to any hospital or physician without charge on request who has a laboratory technician employed.

The State Board of Health is pleased with the progress made by the program and contemplates its continuance after the Commonwealth Fund finally withdraws its financial support.

I wish to express to the medical profession and the hospital administrators of the state, my sincere appreciation for their wholehearted coöperation in making this program the success it has been.

Every case of tuberculous meningitis in childhood should be regardeed as a pointer to a dangerous open case of respiratory tuberculosis in the immediate entourage of the sick infant; this case should at once be sought and the appropriate action taken when found.

—C. O. Stallybrass, M.D., Brit. Med. J.,
Feb. 5, 1949

Patent Ductus Arteriosus—A Report or Three Cases Successfully Treated by Surgery*

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SINCE the earliest description of ductus arteriosus there has been, until a few years ago, little or no change in the management of patients with a persistence of this abnormality. Treatment was entirely medical and symptomatic, with most of the cases eventually developing congestive heart failure and bacterial endocarditis as major complications.

In fetal life the atelectatic state of the lungs and the consequent small size of the pulmonary vascular bed made it necessary for nature to provide some method whereby a large part of the blood can be kept circulating without passing through the lungs. This function is fulfilled by the ductus arteriosus which permits blood to escape directly from the pulmonary artery into the aorta. After the child is born the lungs expand and blood should travel through the pulmonary bed for oxygenation; the short-circuiting action of the ductus arteriosus is no longer necessary. Under normal conditions this vessel becomes closed off soon after birth, but in some individuals this obliteration is delayed for weeks, months, or even longer.

When the ductus arteriosus does not close the individual is left with a condition which is essentially an arterio-venous fistula, and it places upon the heart an increased work similar to that of an arteriovenous fistula elsewhere in the body. After birth the flow of blood in the ductus becomes reversed because the pressure within the aortic arch becomes higher than that of the pulmonary circuit. This communication is tolerated very well if the individual is fortunate enough to escape superimposed infections and if the ductal shunt is relatively small. Under these conditions, individuals have been found to have little or no incapacitation and have lived to advanced years. There are, however, certain hazards which are well recognized and which occur frequently. 1) The shunt may divert so much blood from the aorta that the peripheral circulation is deficient to a degree sufficient to cause retarded physical development. These individuals, while below par in height and weight, as a rule have normal mental developments and capacities. 2) The heart must increase its output in order to maintain peripheral circulation to a satisfactory level because of the extraordinarily large amount of blood shunted through the ductus. This explains why the individual may be relatively well developed and entirely normal in appearance and yet may have evidence of cardiac embarrassment even to cardiac failure. 3) There may become a superimposed bacterial infection upon this abnormality, usually from the streptococcal viridan organisms. It is reasonable to assume that this may take place in about 25 per cent of the individuals who live into adolescent and adult years. 4) There are other rare complications; namely, aneurysmal dilatation and rupture. Aneurysmal dilatation is more commonly seen in childhood and rupture more commonly a problem in adult life.

The best studies on the prognosis of individuals with an untreated patent ductus arteriosus have been made by Keyes and Shapiro[1]. They point out that the patients who are alive at seventeen years of age with a patent ductus arteriosus have a life expectancy which averages only one-half of that of the population as a whole. From these findings it becomes apparent that a patent ductus when viewed early in life may be considered a benign abnormality, but over a long period follow-up the outlook is serious from the possibility of ultimate incapacitation and from the shortening of life. In a series of ninety-two patients studied by Abbott[2], one-fourth died of bacterial endocarditis and an additional one-half died of slow or rapidly progressive heart failure. The average age in these ninety-two cases was twenty-four years of age.

Diagnosis

It must be remembered that a patent ductus arteriosus represents not a congenital anomaly of the heart but rather an abnormality. It is important to note that the normal closure of the ductus arteriosus in the first few months after birth is not accompanied by a thrombosis of this channel. The appearance of a clot within the lumen of the ductus or the formation of a thrombosis at either end of a closed ductus must be regarded as a pathologic process.

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Individuals with a patent ductus may have little or no evidence of cardiac embarrassment or they may have signs and symptoms of cardiac invalidism, depending principally upon the age of the individual and the size of the communicating shunt. As a rule this abnormality is tolerated very well during childhood years and frank decompensation is rarely seen. It is not uncommon to see children with boundless energy who may appear to be entirely normal to their parents. There may be only a slight to moderate limitation of physical activity, or physical exercise may be tolerated well and only followed by palpitation, undue fatigue and dyspnoea. Individuals in mid life usually have moderate to severe embarrassment; actual failure is less commonly seen in the mid period of life but makes its appearance well in advance of that which may be expected in the normal advancement of life. It is not uncommon to see individuals at thirty or forty years of age who have no frank signs and symptoms of cardiac failure, but who have a disproportionate sense of fatigue and loss of the usual energy. These individuals are not bedridden nor are they invalided in any sense of the term, but they are definitely limited in their usefulness and efforts as a result of the excessive load placed upon the overburdened heart.

The general physical development is sometimes retarded. When compared to normal children the height and weight are apt to be less normal, and in a few instances the findings are striking. In the majority of cases, however, the physical growth has never been appreciably impaired, and appears to be unusually good. The physical findings in uncomplicated cases include certain features. Associated defects in other parts of the body are rare. The mucous membrane and the color of the skin is normal, and pallor is only noted in those individuals with a rather large shunt, or following physical exercise. Cyanosis is never noted unless the patient has a frank cardiac failure. Clubbing of the nails, as seen in some other congenital cardiac defects which embarrass pulmonary circulation, is not present in this abnormality. The heart measurements may range from slight to moderate increase in size. Tremendous enlargement is an exception. If the ductus is large the cardiac impulse has an increased forceful and a heaving pulsation transmitted into the neck vessels.

The murmur is quite characteristic. On auscultation it is usually heard in the pulmonary region in the second or third interspace to the left of the sternum. It is a continuous murmur, accentuated in systole and receding in diastole. A very distinct feature of this murmur is the rumbling quality which has been described as a "machinery murmur." Clinicians who have examined several of these individuals should expect little difficulty in identifying this murmur. It may be widely transmitted over the precordium to the left of the axilla and into the neck, and usually to the left of the spine posteriorly. While all of the murmur is transmitted, it is more common to hear only the louder systolic element transmitted from the pulmonary area into the above mentioned distributions. The ductus murmur is of considerable intensity and is nearly always accompanied by a thrill. This thrill is most intense over the pulmonary region and usually not transmitted far beyond this area.

The blood pressure findings are usually those of a systolic level which is essentially normal. The diastolic level on the contrary may be normal or markedly depressed, depending upon the size of the ductus. At times the pulse pressure may be exceedingly high and in these, Durosier's sign and a visible capillary pulsation in the nail beds, have been noted.

Electrocardiographic studies are quite helpful because they are almost always normal. The evidence gained from the electrocardiogram is of a negative character. In elderly individuals some left axis preponderance may be seen, especially in individuals who exhibit cardiac embarrassment. In uncomplicated patent ductus arteriosus, no right axis preponderance has been noted. The detection of right axis preponderance in the electrocardiogram should make one suspicious of the presence of some other lesion, particularly one involving the pulmonary artery. Increase in the length of the PR interval should make one suspicious of changes in the interauricular septum. Fibrillation and other indications of myocardial damage may be seen in older individuals, such as is seen in patients without a ductus when strain on the heart is becoming excessive. The blood entering the pulmonary artery returns to the left ventricle by way of the lungs without reaching the peripheral circulation. To compensate for this loss of blood in the periphery, the volume output of the left ventricle must increase. This results in considerable increase in work of the left ventricle, resulting in left ventricular enlargement, strain, and eventually failure. There is some increase in the work of the right ventricle, as it must circulate the added amount of blood entering the pulmonary artery from the aorta. These effects on the ventricles explain the normal axis deviation and the mild left axis deviation in the electrocardiogram. The patent ductus is associated with many of the hemodynamics and other cardio-physiologic manifestations so well known in arterio-venous aneurysm in other parts of the body and in cases of aortic regurgitation.

Roentgenologic studies are fairly typical in these individuals. In general, when the ductus is small the picture may be normal, and when the ductus is moderate to large certain features are obvious. The heart is slightly to moderately enlarged, more in its transverse dimensions. Marked enlargements are exceptions. Because of the increased volume of blood in the pulmonary artery this vessel is more distended than normal and projects outward from the left upper border of the heart shadow. At times a left auricular enlargement may be demonstrated and this is best seen by an encroachment upon a barium filled esophagus. Fluoroscopic examination shows a heart with an increased amplitude of pulsation, particularly of the left ventricle, but also in the aortic knob and pulmonary artery. While roentgenologic and electrocardiographic observations are important, it is well to remember that a careful physical examination is the most important factor in recognizing the condition. If the characteristic physical findings are not present, one should not depend upon laboratory and roentgenologic findings which may only suggest a patent ductus arteriosus.

Because of the striking benefit obtained by the work of Gross[3] and Hubbard and the impressive results obtained in the hands of other competent surgeons, a wave of enthusiastic interest in the surgical treatment of patent ductus arteriosus has developed. This can be very readily understood, since the development of the safe operative procedure to correct a persistent patent ductus arteriosus has made it possible to convert an irreversible type of heart disease into a reversible one.

The Selection of Cases for Operation

It is generally assumed that certain individuals should be operated upon and there is still some debate concerning the desirability in others. The criteria for selection of cases submitted for operation have changed since the first successful operation reported by Gross[4] and Hubbard in 1939. The child or adolescent who is not developing properly in physical stature will derive lasting benefit from the closure of the shunt. All such cases detected in childhood or adolescence should be carefully studied and submitted for operation as early as is practicable. Many patients are seen in the first phase of life when they are relatively free of symptoms, and the problem arises regarding the desirability of operation in the hopes of avoiding future complications. It was the original contention of Gross[5] that operation was not justifiable under such circumstances but his views have been altered. The mortality rate for operation on the ductus in children is less serious and exceedingly low, being in the neighborhood of 1 per cent. This risk in the hands of skilled thoracic surgeons outweighs the risk of allowing these children to remain untreated. The policy advocated by Gross is one of advising operation for all individuals in the childhood period who have a patent ductus arteriosus even though they are symptom free at the moment. This is adopted mainly for two reasons: 1) An increasing number of individuals are presenting themselves in mid life with serious fatigue, impairment of general efficiency, or actual failure, and a careful review of history indicates that they had no complaint in the early period of life. 2) There is a tremendous difference in the technical difficulties encountered in adult life as compared with those of the childhood period. Before puberty, one can practically guarantee a permanent and complete closure of the ductus. In contrast, the adult presents features which greatly complicate the undertaking and tax the surgeon's ingenuity. The ductus itself and the great vessels are much more rigid and will not stand as much manipulation and are subject to serious injury. With advancing years, the ductus tends to become shorter and there is less room in which to work.

The individual who has some evidence of cardiac embarrassment or failure can have his burden greatly reduced by surgical closure. The patient with superimposed bacterial endocarditis and endarteritis can likewise be helped in the majority of incidences. Since the advent of penicillin therapy and its permanent cures, the question of surgery versus penicillin therapy is as yet unanswerable. It is generally believed that surgical procedures should not be undertaken in adult life unless there are very clear indications for the necessity of surgery, because the risk of the non surgical therapy is probably lower than the risk of the surgical attack at this age. Surgical intervention should be adopted only by those who are able to demonstrate a reasonably low mortality rate in an extended series of cases. The widespread use of this procedure by the "occasional operator" with limited experience in this field is not justifiable, because the operation by such individuals will probably show a higher mortality rate than will be the case of these patients left without surgical intervention. One must be very cautious in examining individuals who have cyanosis associated with typical signs of patent ductus arteriosus. Under such circumstances, the ductus should never be closed since it is always a compensatory mechanism for some other cardiac lesion. In the presence of right ventricular preponderance with or without cyanosis, one must bear in mind that other abnormalities may exist and that surgical intervention may even be dangerous. On the other hand, the presence of rheumatic valvular disease with stenosis of the mitral valve or the presence of interventricular septal defect is not a contraindication since the ductus does not compensate for these lesions. Obviously, operation on such patients will not restore the heart to its normal status, but strain can be relieved and the burden made less burdensome.

Case Reports

We are presenting case histories of three patients, representing three phases of life, successfully treated by surgical intervention.

1. M. J. R. white female, age 4, originally seen in February 1943. This child was seen by our pediatric colleague in a routine physical examination, and the classical signs of patent ductus arteriosus were noted. The child had been considered perfectly normal and her medical history had been uneventful. Physical examination of the heart revealed a loud machinery-like murmur heard loudest along the left border of the sternum. There were no signs of physical or mental retardation. Several consultants agreed upon the clinical diagnosis of patent ductus arteriosus, but advised a tonsillectomy as a prophylactic measure before submitting the patient for ligation of the ductus. A tonsillectomy was performed. Penicillin and sulfonamides were administered both preoperatively and postoperatively.

X-ray of the lungs showed no abnormality. The pulmonary vessels were not definitely accentuated and the transverse diameter of the heart measured 8.7 cm. as contrasted with a hemithoracic 9.1 cm. The left ventricle was slightly prominent and there was a slight suggestion of prominence in the region of the pulmonary conus. Fluoroscopically, the aortic arch was on the left and the aorta seemed to be in normal position. The electrocardiogram was normal in all leads. The blood pressure was 102 systolic and 58 diastolic, with a slight increase in pulse pressure. Routine laboratory studies including blood urea nitrogen, glucose, carbon dioxide capacity, cultures, serologic test for syphilis, fecal examination for ova and parasites, and urinalysis were all normal. A complete hemogram showed a slight suggestion of anemia. The hemoglobin was 11.7 grams, red cell count 3,950,000, sedimentation rate 6 mm. at the end of one hour, leukocyte count and differential were normal, and there were 680,000 platelets per cubic mm. and the reticulocyte count was 1.6 per cent. The hematocrit was 36.

She was admitted to the Ochsner Foundation Hospital on October 18, 1947, was operated upon on October 20, 1947. The patient received 500 cc. of blood and left the operating room in excellent condition and was discharged on October 28, 1947. The murmur was recorded preoperatively on a stethocardiogram and the clinical and stethocardiographic findings postoperatively revealed a disappearance of the murmur. The patient was last seen on January 13, 1948. She was asymptomatic, and physical examination was entirely negative except for a well healed scar. No murmur or thrill was present.

Comment: This case represents surgical treatment under the most ideal circumstances. The condition was detected early in life and there were no developmental defects attributable to the abnormality. Surgery was relatively easily performed and at this age one may guarantee a complete and permanent closure of the patent ductus arteriosus.

2. Mrs. L. V. S. white female, age 25, consulted us on December 30, 1946. The purpose of the consultation was to determine her fitness for pregnancy. Until three years ago this patient had been considered perfectly normal.

In February 1943 an examination for insurance disclosed the presence of a heart murmur. Apparently there had been no mention of this murmur in early life, and we presume that it had not been detected before this time. The patient had presented no symptoms whatsoever attributable to the cardiac lesion. There had been no past history of rheumatic fever or obscure febrile illness. There was no past history of dyspnoea, cyanosis, or anything to suggest cardiac impairment.

Physical examination showed a white female age 25. The height was 61½ inches and weight was 118 pounds. Blood pressure was 120/70. The heart rate was 80 and regular. There was no evidence of radial sclerosis. The tonsils were cleanly removed. Physical examination was entirely normal with the exceptions of the cardiac findings. Occasional premature beats were noted. There was a loud machinery-like murmur heard over the precordium, continuous in character with a systolic accentuation, and heard both anteriorly and posteriorly. The area of maximum intensity was over the pulmonic area. In addition to this murmur, both the aortic and pulmonic second sounds were audible and a definite diastolic thrill corresponded to the maximal intensity of the murmur. A diagnosis of patent ductus arteriosus was made.

This patient was referred to Dr. Paul White and Dr. Robert Gross on June 18, 1947. "On May 19 I examined Mrs. L. V. S. and found that there is no doubt about the diagnosis of congenital patency of the ductus arteriosus nor did I think there was any complication. Fortunately, she had been free of symptoms and had not had any evidence of strain from this cardiovascular defect. The blood pressure was a little full, 110/60. The heart was of full size, roundish in shape, with only a little prominence of the pulmonary artery, but with active pulsation of the heart and aorta. By orthodiagram the transverse diameter of the heart was 11.3 cm. and the internal diameter of the thorax 23.8 cm. The electrocardiogram was normal in all leads, limb and precordial.

I thought she was completely suitable for surgical relief both from the standpoint of risk and need. I saw her again on June 14 and made the following notes on her record: "Successful operation by Dr. Gross, June 2. Will return home next week. Only symptom is soreness of wound. Looks well. Pulse regular at 78, blood pressure 120/90. No murmurs. Fluoroscopy: Normal heart size and shape. By orthodiagram the transverse diameter of the heart measured 10.8 cm. Left diaphragm high. Comment: Excellent results. RX. Normal life."

Comment: This case represents one in which no difficulty had been experienced in infancy or adolescence. It is reasonable to assume that to the casual observer, this abnormality may not have been recognized. It is also possible that this patient may have experienced no cardiovascular involvement throughout a normal span of life as a result of this abnormality. However, one recognizes that pregnancy changes the hemodynamics and in patients with patent ductus arteriosus may represent a real hazard.

In the early years of surgical intervention, according to Gross's original concept of the selection of cases for surgery, this patient would probably have been rejected. Because of the responsibility involved in making this decision, we referred this patient to Dr. Gross whose experience in this field is unparalleled. The excellent results obtained in this case and the promise of a normal future justified the surgical intervention.

3. Mrs. E. J. V. white female, age 40, came under our care in March 1941. We made a diagnosis of patent ductus arteriosus and she had been treated by medical conservatism. In view of the excellent results obtained in the two cases previously reported, and because the signs and symptoms of excessive cardiovascular strain and impending heart failure were making their appearance, we considered submitting this patient for operation.

Physical examination showed a middle aged white woman, 61½ inches tall and weighing 169 pounds. She gave the appearance of one who was slightly stunted in physical stature, probably as a result of this abnormality. There was a definite sinus tachycardia, rate 110, after thirty minutes of bed rest. There was a rather marked precordial thrust and a loud machinery-like continuous murmur heard over the entire precordium, with the area of maximum intensity in the pulmonic area. This murmur was superimposed upon a loud snapping pulmonic second sound and an intensified aortic second sound. A thrill was present over the precordium corresponding to the site of maximum intensity of the murmur. Blood pressure in both arms was 170/50. The pulse pressure was full, and there were signs of aortic insufficiency with a water hammer pulse and jumping carotids. Other incidental findings included an asymptomatic uterine prolapse, chronic endocervitis, bilateral nerve deafness of a mild degree, and a marked nasal septal deflection.

X-ray of the chest revealed a prominence of the left border of the heart, and suggested a combination of both left and right ventricular hypertrophy. The pulmonary shadow was markedly prominent. The hilar shadows were considerably increased in both lungs. The aorta was normal but the aortic knob was rather small. An oblique film of the chest confirmed the fluoroscopic impression of left auricular enlargement and prominence of the pulmonary conus with exaggerated pulsations. The hilar shadows on fluoroscopic examination showed increased pulsations, commonly known as "hilar dance," a condition infrequently seen except in patency of a rather large communicating artery.

Blood urea nitrogen was 12 mgs. per cent, glucose screen was 184 mgs. per cent, blood serology was negative, urinalysis was essentially normal, purgation stool examination was negative, red cell count was 4,000,000 hemoglobin was 81 per cent or 12.6 grams, white blood count was 7,200, there were 56 neutrophiles, 39 small lymphocytes, 1 eosinophile, and 4 monocytes. The sedimentation rate was 12 mm. at the end of one hour. The blood plasma volume was 2970 cc., a red cell mass was 2240, with a total of 5210. cc.

This patient was referred to the Ochsner Foundation Hospital and submitted for operation on October 30, 1947. "At the time Mrs. V. was operated upon, we had a great deal of trouble with her. After putting on the clamps which we do on the patent ductus and dividing it, I sutured the pulmonary artery side without a great deal of difficulty. There was the usual bleeding which did not amount to very much. When we took the distal clamp off on the aortic side and put the running suture in and removed the proximal clamp, it looked as if we had not put any suture in at all. As a matter of fact, if one could have taken a shower in blood it could not have been more similar. She lost so much blood in such a short period of time that she went into shock which permitted us to suture this a little bit better. This, however, did not hold at all because apparently due to the disease of the aorta none of the suture would hold. As a final resort I put some gelatine foam in and this controlled it even after her pressure had come back. I am sure that if we had not had gelatine foam we would have lost her on the table. Aside from this we had no difficulty with her. She developed some pleural effusion postoperatively but otherwise her convalescence was very satisfactory."

Following difficult surgical intervention and a stormy convalescence this patient has become ambulatory and now presents the following features. Height 61½ inches, weight 144½ pounds. There is a loss of some 15 pounds since surgery. The heart action has lost much of its forcefulness. The systolic blood pressure level has become stabilized at approximately 145 and diastolic 92, and there is a considerable improvement in pulse pressure. The patient states that she definitely misses the machinery-like murmur, which has been her constant companion since her earliest recollection. However, she has developed, approximately three months after surgery, a slight systolic murmur heard to left of the sternum in the second interspace and transmitted into the neck vessels and the chest posteriorly.

Comment: It is possible that this patient, due to surgical difficulty and the evidence of arteritis, did not receive as complete closure of the ductus as one would hope for. This case represents one in which surgical intervention was delayed too long and was only attempted in the hopes of advertising an impending heart failure. We did not anticipate as excellent recovery and prognosis in this as the two operated upon in early life.

Comment: Congenital patency of the ductus arteriosus is now amenable to surgical intervention and in the early period of life is curable. The criteria for selection of cases to be submitted to surgery have changed, and now includes all recognizable uncomplicated patent ductus arteriosus seen in infancy, adolescence or early adult life. Surgery in persons of middle or late adult life should be attempted only when there is a possibility of preventing heart failure or other complications associated with the excessive burden placed upon the heart by this abnormality.

Three cases representing three periods of life with three different indications for surgery have been presented. The result in two was completely satisfactory: the result in the last case was a compromise but considering the result obtained seems to have justified the procedure.

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Discussion

Dr. J. Harvey Johnston, Jr. (Jackson)—The syndrome of patent ductus arteriosus is one of the easiest of the congenital cardiac abnormalities to diagnose with certainty. Although obliteration of this normal fetal pathway is usually complete by the end of the second month, closure may be delayed until the sixth or twelfth month of life. Failure of normal obliteration to occur markedly increases the work required of both ventricles. Oxygen tension studies on operated cases revealed that the volume of blood shunted through a patent ductus may be enormous—from twenty to seventy per cent of the total volume of blood expelled from the left ventricle.

The symptoms produced vary with the size of the ductus but may include dyspnoea, palpitation and stunting of growth. As the shunt is from the systemic to the pulmonary circulation, there is characteristically no cyanosis or clubbing of the fingertips. The best diagnostic finding is the continuous "machinery" murmur and thrill over the pulmonary area. This pathognomonic murmur is often absent in infancy and early childhood, as the systemic diastolic pressure may not be significantly greater than the pulmonary. Until this occurs there is only a loud systolic murmur.

There still remains some difference of opinion in the indications for ligation of the patent ductus arteriosus. Gross has achieved such dramatic results, with a mortality rate of less than one per cent, that he advises routine ligation of all cases. He estimates that without surgical correction a child with a patent ductus has one chance in four of living a normal length of life, one chance in four of dying of bacterial endocarditis, and almost two chances in four of dying with heart failure.

Taussig is more conservative but advises ligation in the following instances: 1) stunting of growth, 2) great cardiac enlargement indicating a low cardiac reserve, 3) a low diastolic pressure or marked fall in diastolic pressure after exercise, 4) cardiac failure, and 5) development of subacute bacterial endocarditis. Taussig considers this last complication to be almost a surgical emergency since ligation usually effects prompt sterilization of the blood stream. The consensus of opinion, however, is to attempt sterilization with large doses of penicillin and streptomycin before surgical interruption is done.

In conclusion it should be emphasized that surgery for patent ductus arteriosus is very effective in an otherwise irreversible cardiac condition. In the hands of those trained in thoracic surgery the mortality rate will be less than five per cent. The optimum time of operation is from the fifth to the fifteenth year. Division in adults is much more difficult than in children as the ductus is dilated, thin walled and often sclerotic.

The efficacy of streptomycin against tuberculous infections has proved that tuberculosis is yet another disease vulnerable to chemotherapeutic attack. Without undue optimism, greater triumphs may be anticipated. Karl H. Pfuetze, M.D., and Marjorie M. Pyle, M.D., JAMA, March 5, 1949.

Mental Hygiene Program at a State and Local Level*

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It is a pleasure to come to Mississippi to address this organization. I feel that I am five years late, since Mississippi, under the able leadership and foresight of Dr. Underwood, has had an operating out-patient mental health program since 1943. Mississippi holds a unique position since, on July 1, 1947, more than half the state had no out-patient mental health program of any kind in the agency that was designated to act as the State Mental Health Authority and receive grants under the National Mental Health Act.

Since we are going to discuss a mental health program at the state and local level, it is necessary that we should ask ourselves "What is mental illness?" Certainly, it is not a single disease that affects a peculiar segment of our population but, like infectious diseases, is a grouping of diseases that are related and that have their effects on all segments of the population. One might, at the risk of being incomplete but brief, define mental diseases as those disorders of personality or intelligence which interfere with the efficient functioning of an individual. Such disorders may be organic, toxic, metabolic, due to mental deficiency, may be neuroses, psychoses, character disorders, or behavior disorders in children. I will not repeat figures that are familiar to you with regard to the number of men who were rejected in the draft or discharged from the services as a result of mental illness. Is there anyone in the country today who does not know that half the beds in hospitals are for the care and treatment of patients with mental illness?

We can set forth a half-dozen rather fundamental objectives of a mental health program: **Number 1.** A mental health program should assure, in so far as possible, that individuals are born with the best constitutional endowment. Medicine has in its possession a few scientific facts with regard to the incidence of certain types of mental illness as the result of hereditary factors. These facts should be utilized. In addition to genetically determined hereditary illnesses, there are infections and traumatic diseases that result in defective offspring. These should be controlled. **The second** objective of a mental health program is to make possible the provision of a family environment conducive to the organization of an adequate personality structure in early childhood. By doing so, an individual is developed who is capable of sustaining at a later period the trauma associated with everyday living and the periods of stress and turbulence. **Number 3.** It is necessary to provide adequate out-patient facilities for helping the individuals who can be treated outside of hospitals. **Number 4.** Provision should be made for training institutions for the mentally defective. **Number 5.** Adequate hospital care is needed for those who are severely incapacitated because of their mental illness, including general hospital beds and special hospitals. **Number 6.** An adequate home-care program would then provide for early hospital release and a graduated return of patients to the community.

A rather remarkable change has occurred within the past ten years in so far as the attitude psychiatry is concerned. The reasons for this change are difficult to ascertain. However, the impact of the effects of mental illness on the availability of men for service in the armed forces presented certain problems to the public in a dramatic way. The separation of a large number of men from the services for psychiatric reasons was a further sensitizing factor. Added to this were all the problems that were thought to be inherent with the return to peacetime activities of those who were in the armed forces. Fortunately, the anxiety and apprehension associated with this transition was not fully justified. However it alerted the newspaper and magazine writers to the possibility of using mental health and psychiatry in their writings. This brought to a great many people knowledge, of a type. Today, the exploitation of psychiatry is almost as great as that of vitamins in the past. One can read it in the comic strips, the advice columns, the front pages, the weekly magazines, and almost every book—see it in the movies—and hear it on the radio. There are those who do believe, and who want to believe, that psychiatry has the answer to all things. Today, we are facing a period in which the population of our country is growing older. Preventive medicine has been so successful that it has as a tribute the ever-increasing number of old people. The control of infectious and other diseases has allowed a great many people to live to an age when metabolic processes exact their toll and produce mental illnesses based on arteriosclerotic changes and on the senile changes of advanced age. Psychiatry does not have an answer to the mental illnesses associated with old age. It can make the handling of such people easier for those who have the responsibility of their care, by explaining what happens to persons when they grow older and that the things which are offensive to those around them are not necessarily a directive action taken by choice by the old person. Another limiting factor that emphasizes the need for research is that little is known of the etiology of one of the most important psychiatric disorders—schizophrenia. Treatment of this disorder is on an empirical basis. Patients with schizophrenic disorders occupy more of the hospital beds in this country than patients with any other disease. Psychiatry has little to offer with regard to amelioration of severe character disorders as manifest by psychopathic personality reactions. Some of the neuroses are extremely resistant to treatment. Psychiatry is not a panacea for the solution of problems of international relations, for inter-racial relations, and employer-employee relations. It cannot compensate nor correct all the self-abuse that is now a part of our American living process. Lastly, I want to emphasize that psychiatry is not a substitute for religion or the family.

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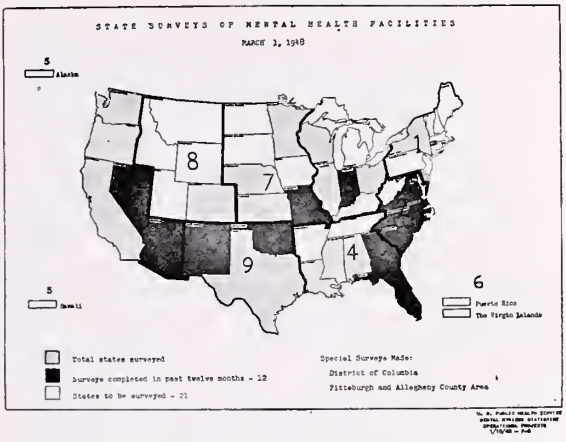
*Read before the Section on Public Health and Hygiene at the eightieth annual session of the Mississippi State Medical Association, Jackson, Miss., May 11-14, 1948.

One of the first things that must be done in order to produce a satisfactory mental health program is to survey the situation as it exists. This means to determine the presence or absence of facilities of all types, to determine the quality and the quantity of treatment that can be furnished, and to determine the needs of the population. **Slide 1,** shows the states that have been surveyed by the Public Health Service with regard to the mental health facilities available. It is an extremely complex and difficult matter to gather together all the information about a particular state and give the data proper and useful interpretation.


STATE SURVEYS OF MENTAL HEALTH FACILITIES
MARCH 1, 1948
5
Alaska
8
7
1
9
4
5
Hawaii
6
Puerto Rico
The Virgin Islands
Total states surveyed
Surveys completed in past twelve months - 12
States to be surveyed - 21
Special Surveys Made:
District of Columbia
Pittsburgh and Allegheny County Area

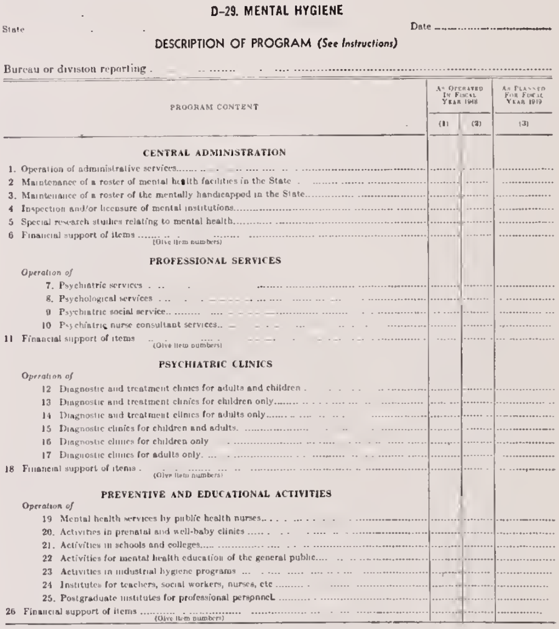
In formulating a state or local mental health program, one has to proceed to meet the immediate demands first. Because of the seriousness of many mental illnesses and the danger of the individual to himself or to others, it is necessary that hospitalization be instituted in many instances. Unfortunately, most of the mental hospitals in this country are located far from the centers of population and medical centers and have tended to be isolated from the flow of medical thought and activity. This has proved to be a very deleterious factor. In addition, the amounts of money appropriated for the care and treatment of patients in mental hospitals have been pitifully small so that so-called hospital care in many instances has deteriorated to custodial care, and it is different in name only from the care that is provided for criminals. One of the first objectives then, in providing hospital care, is to have an adequate number of beds with a competent staff. By a competent staff, I mean not only psychiatrists but psychiatric nurses, clinical psychologists, psychiatric social workers, and well-trained attendants. Those with specialized training must be brought to the hospital, and state mental hospitals must compete with others for their services by offering adequate salaries and opportunities for satisfying work. Much can be done to improve the care in present mental hospitals by increasing the in-service training of attendants and nurses, and by utilizing state mental hospitals as places for training in the various specialty fields related to the care and treatment of psychiatric patients. Nothing attracts young physicians like the opportunity to get good training.

These things that I have talked about cost money. It is, therefore, pertinent to inquire whether the investment of this money in the provision of adequate care actually is an expense or a saving over a long period. A number of studies have shown that adequate treatment in early stages of mental illnesses produces recovery that would not occur had poor treatment been given a later date or if any treatment, even of good quality, were given at a late stage. Not only does good early treatment result in ultimate savings for the hospital and therefore the taxpayer, but it enables patients to return to the community and assume their contributing role to society and to provide support and earnings for their families. Part of the pessimistic present attitude with regard to mental illness is based not upon the irreversible nature of mental illnesses, but upon the presence in mental hospitals of a number of patients in the chronic stage of disease who were neglected while still treatable. The very presence of these patients is a condemnation of two things: one, the inadequacies of psychiatry and, secondly, the failure to utilize the knowledge that is available. Although conditions in state hospitals are rather poor, one has recently reported that 55 per cent of first admissions are discharged within one year and that 70 per cent eventually leave the hospital.

One method of handling psychiatric patients that has not been utilized to its fullest extent is the home-care program for the mentally ill. There are many patients in state mental hospitals today who could be discharged from the hospital because they are neither dangerous to themselves nor to others, even though they are not fully recovered from their illness. If these patients are placed out of the hospital under adequate supervision, they can make a contribution toward their own support and will relieve part of the burden of the mental hospital. Not only is this an economic saving, but it provides a transition period for the patient. It is a period of partial protection during which patients are able to adjust in a fashion to the demands which they meet outside of hospitals. It is analogous in many ways to the period on crutches which is necessary for those who have had a fracture, but who are past the stage where staying in bed is a necessity.

One of the provisions of any mental health program should be for training institutions for the placement and training of those who are mentally defective. Many of these individuals can be trained and rehabilitated so that they can return and discharge a useful responsibility in the community. In others, the defect is so great that adequate custodial care must be provided.

Under the National Mental Health Act, grants are made to the states for extra-mural health programs. **Slide 2** shows the program content which has been outlined as a skeleton for a state program. You will see that the first main heading is labeled "Central Administration." Under this heading are a number of items, including the survey of the problem and facilities that I have mentioned above. Another activity fundamental in carrying out an effective mental health program is the knowledge of the location of the mentally handicapped individuals. The next item has to do with inspection and licensure. This is a responsibility to the public that must be discharged so that it can have a feeling of confidence that institutions provide adequate medical care. The next item has to do with special studies. Some of these will be for the evaluation of practices and procedures that are to be inaugurated. Others will be related to the necessity for providing mental health facilities of a special nature.



D-29. MENTAL HYGIENE

State Date

DESCRIPTION OF PROGRAM *(See Instructions)*

Bureau or division reporting

Program Content	As Operated in Fiscal Year 1948		As Planned for Fiscal Year 1949
	(1)	(2)	(3)
CENTRAL ADMINISTRATION			
1. Operation of administrative services			
2 Maintenance of a roster of mental health facilities in the State			
3. Maintenance of a roster of the mentally handicapped in the State			
4 Inspection and/or licensure of mental institutions			
5 Special research studies relating to mental health			
6 Financial support of items (Give item numbers)			
PROFESSIONAL SERVICES			
Operation of			
7. Psychiatric services			
8. Psychological services			
9 Psychiatric social service			
10 Psychiatric nurse consultant services			
11 Financial support of items (Give item numbers)			
PSYCHIATRIC CLINICS			
Operation of			
12 Diagnostic and treatment clinics for adults and children			
13 Diagnostic and treatment clinics for children only			
14 Diagnostic and treatment clinics for adults only			
15 Diagnostic clinics for children and adults			
16 Diagnostic clinics for children only			
17 Diagnostic clinics for adults only			
18 Financial support of items (Give item numbers)			
PREVENTIVE AND EDUCATIONAL ACTIVITIES			
Operation of			
19 Mental health services by public health nurses			
20. Activities in prenatal and well-baby clinics			
21. Activities in schools and colleges			
22 Activities for mental health education of the general public			
23 Activities in industrial hygiene programs			
24 Institutes for teachers, social workers, nurses, etc			
25. Postgraduate institutes for professional personnel			
26 Financial support of items (Give item numbers)			

The next main heading is "Professional Services." This includes services provided by specialized personnel such as psychiatrists, psychologists, social workers, and mental health nurses. These personnel can serve as consultants or furnish services to the schools, welfare agencies, courts, patients under home-care program, special extra-mural facilities for handicapped children, nursery schools, and so on.

The next main heading is "Clinic Services." Various types of clinic services can be established—those for the treatment of children or adults or for the treatment of both; clinics that are fixed in location or clinics that travel. In addition to supplying specialized services to people who are ill, the clinic should serve as a focal point for community education and for preventive and educational activities. The latter is the next main heading which you see on the program. The public health nurse, because of her widespread activities and her contacts with many individuals, occupies a unique position and, if she is given proper training and has possession of a few fundamental principles of mental hygiene, she can do more than anyone else, I believe, towards the promotion of the development of sound personalities in young individuals. The areas of contact with large numbers of the population by the public health nurse comes through her activities in schools, in pre-natal and well-baby clinics, in home visiting, and in her many other daily contacts. The next heading is "Activities in Pre-Natal and Well-Baby Clinics." Here the obstetrician is in a position to advise the expectant mother and the expectant father with regard to the responsibilities of parents and the role that they will play with regard to the development of good personalities in their children. The pediatrician occupies a unique position in so far as his relationship with parents is concerned. He meets them at the time when their children are in their earliest developmental phases and he, or his nurse, through parent education, can see that the child has an opportunity to develop in a healthy environment conducive toward the formation of a strong personality pattern. He can do more than anyone else what is necessary to correct the devastating effects than can result when parents reject their children, are overly possessive, are insecure or rigid, and he too can give to parents a knowledge of the fundamental needs of children. An increase in knowledge and understanding by parents will do much to minimize the environmental hazard that every child meets. The child needs security brought about by mature parents who, well aware of the emotional growth phases of children, are able to understand the meaningfulness of behavior. Many parents are unaware that their children's personalities are for the most part determined by the parent-child relationship at an early age. The child, faced by the confusion of new, conflicting and behavior-limiting situations, depends almost entirely upon the parent for guidance, for explanation, for example, and for security.

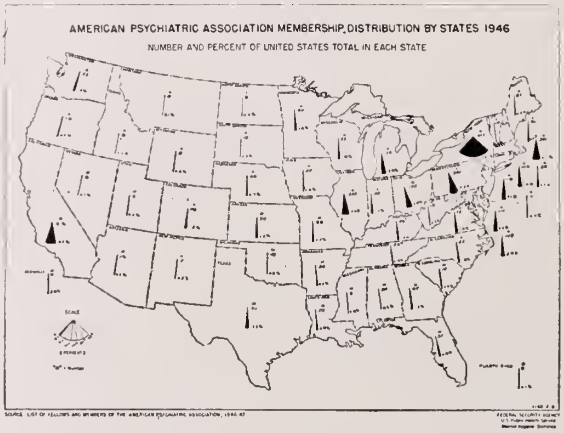
Mental health education should be a part of teacher training and school activities. This does not mean that parents should shift their responsibilities for the development of good personalities within their children to the school teacher. However, the relationship between teacher and pupil can be of such a nature that some of the shortcomings of the child can be corrected. The school presents one of the best opportunities for the realization by the child that he has a place in the social order and that there are other individuals in the world whose lives affect his and that his life affects others. This is a real opportunity for the further development of a social conscience. I think a significant event that is occurring at the present time is the incorporation in many school programs of what are known as "Human Relations Classes." This is being done in a rather extensive fashion by the Delaware Mental Hygiene Society. Children are interested in this type of material; they are interested in themselves—why they react in a certain fashion to a given situation; what the basis is for good relationships with their parents, with their friends; how does the student's emotional status affect his ability to learn? In the later school years, it seems to be an opportune time and probably the only time that certain fundamental knowledge can be imparted to the individuals who will be our future adults with regard to the responsibilities of marriage and the responsibility of parents toward their children.

I have repeatedly spoken about parent education because of its important effect on children. There are many opportunities for mental health education through parent-teacher associations, through the churches, through club memberships, by utilizing various means of communication—the press, the radio, and films. It seems to me that at this point it would be relative to bring into our thinking the place of the mental hygiene society in the mental health program. Although we, as professional individuals, have responsibilities inherent in the treatment of the ill, certainly we need support and the advice of lay individuals with regard to community procedures. Policies and practices associated with the provision of mental health facilities should, in a large part, be determined by advisory boards which include key community people.

I have already spoken about the classroom situation and the unique opportunities that teachers have. Social workers, through their contacts in welfare agencies, have numerous opportunities to see the difficulties that arise as the result of poor emotional situations in a home. One of the most disastrous things that can occur is the break-up of a home with children, since the children are either cast adrift or forced to get along with one parent rather than having the advantage of having two. I do not mean to imply that a divorce is something that should be prohibited, but that something needs to be done to prevent the occurrence of those situations that eventually result in divorce. Something has been done with regard to the education for responsible parenthood, but little seems to be done with regard to the education of individuals with regard to the responsibility of marriage itself.

The next item under this main heading is "Institutes for Physicians in General Practice, for Pediatricians, Nurses, and Other Professional Personnel." It is my belief that such institutes are one of the most important things that can be done at the present time. There is a real interest by many physicians in general practice as to what psychiatry has to offer for use in the everyday practice of medicine. With this objective in view, demonstration institutes have been sponsored in Kentucky and in Virginia and, before July 1, others will be conducted in Massachusetts and in Colorado. These institutes are designed to bring specialists in the various fields of psychiatry to a central place and then to make their knowledge available to the physician in general practice. Over 485 different individuals, mostly physicians, attended a two-week institute held recently in Richmond, Virginia. These institutes can be of various types—presenting of demonstration and didactic material to large audiences or confining the institute to a small number of physicians who work with patients under close supervision and have ample time to discuss what they are doing and what is being accomplished by treatment.

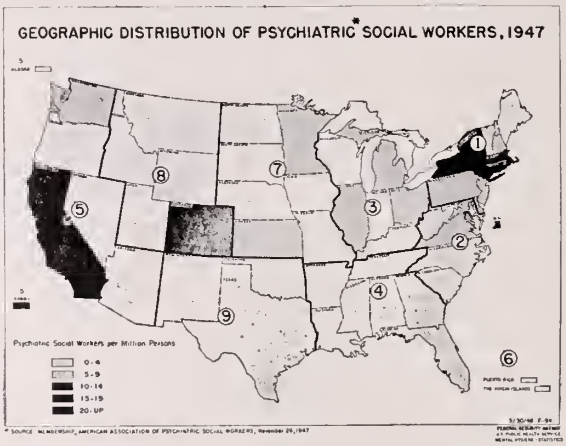
I have been talking about things that could be done. This was not without full knowledge of the limitation on activities imposed by the lack of specialized personnel. As you will notice, the next main heading on the State Mental Health Program is "Training." Funds are available for the states to train individuals who, upon completion of their training, will return and be employed in the state and local mental health program. In order to bring to you some picture of the scarcity of personnel, I would like to show you the next slide (No. 3) which illustrates the distribution of psychiatrists in the United States. You will see that they are concentrated in large population areas and that there are many large areas almost completely devoid of psychiatric services. The next slide (No. 4) shows you the situation with regard to psychiatric social workers. It is almost a duplicate of the former. There are at the present time approximately 5,000 psychiatrists in the United States, half of whom are diplomates of the American Board of Psychiatry. This means there is one psychiatrist for each 28,000 of the population. Even this is a false figure, since many of the psychiatrists are now engaged in state hospital psychiatry and in the federal services, including the armed forces and the Veterans Administration. The situation with regard to psychiatric nurses is even more acute, and well-trained clinical psychologists are extremly rare.


AMERICAN PSYCHIATRIC ASSOCIATION MEMBERSHIP, DISTRIBUTION BY STATES 1946

NUMBER AND PERCENT OF UNITED STATES TOTAL IN EACH STATE

SOURCE: LIST OF FELLOWS AND MEMBERS OF THE AMERICAN PSYCHIATRIC ASSOCIATION, 1946-47

FEDERAL SECURITY AGENCY
U.S. Public Health Service
Mental Hygiene Statistics


GEOGRAPHIC DISTRIBUTION OF PSYCHIATRIC* SOCIAL WORKERS, 1947

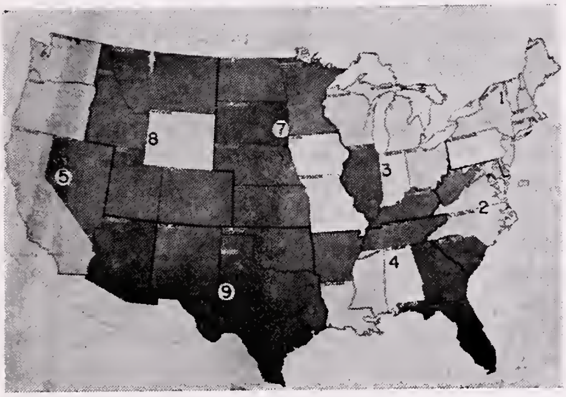
* SOURCE: MEMBERSHIP, AMERICAN ASSOCIATION OF PSYCHIATRIC SOCIAL WORKERS, November 26, 1947

FEDERAL SECURITY AGENCY
U.S. PUBLIC HEALTH SERVICE
MENTAL HYGIENE - STATISTICS

This slide (No. 5) shows the states that have mental health programs. Twenty-three of these forty-five states had no activities prior to July 1 in the agency designated as the State Mental Health Authority. The next slide (No. 6) shows a summary of the mental health activities of the states. The next slide (No. 7) shows how mental health grant-in-aid funds were budgeted by the states during the first six months that they were available. The next slide (No. 8) shows you the agencies that are responsible for carrying out the states' mental health programs. As you can see from the symbols, the state health departments are responsible in most of the states.

STATES PARTICIPATING IN THE NATIONAL MENTAL HEALTH PROGRAM, AS OF APRIL 15, 1948

5 Alaska, Grey 6 Puerto Rico, White

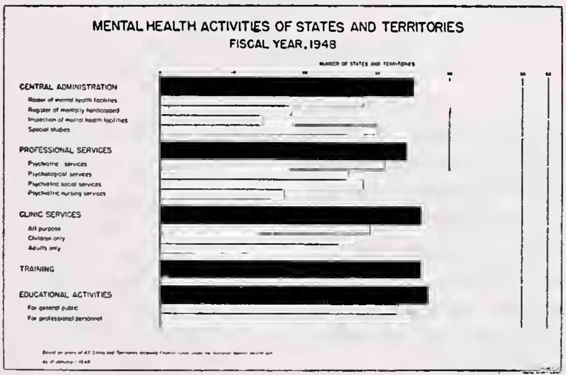


5 Hawaii, Dotted 6 The Virgin Islands

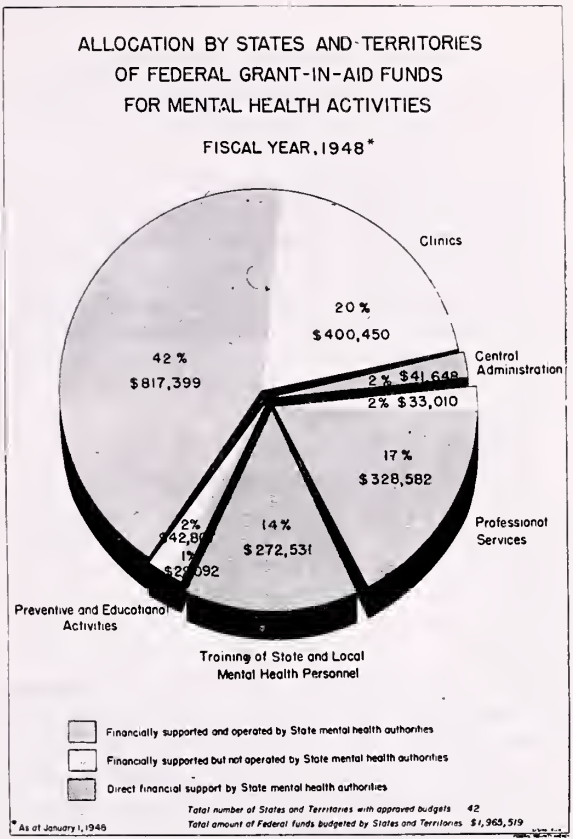
Plans Submitted and Approved

Dotted—Mental Health Program prior to July, 1947—22 States
Grey—No Mental Health Program prior to July, 1947—23 States
White—No plans submitted—8 States

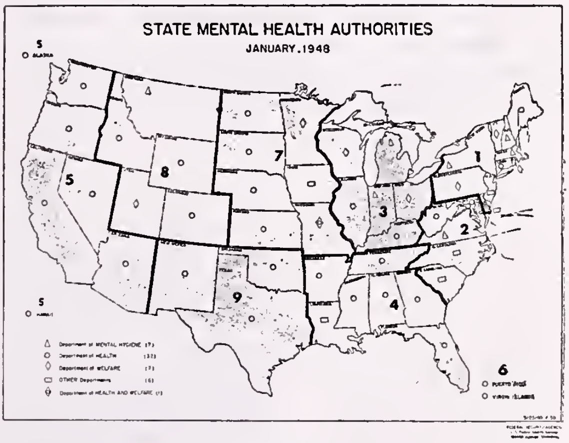
Numbers on map indicate U.S.P.H.S. Districts



Slide No. 6



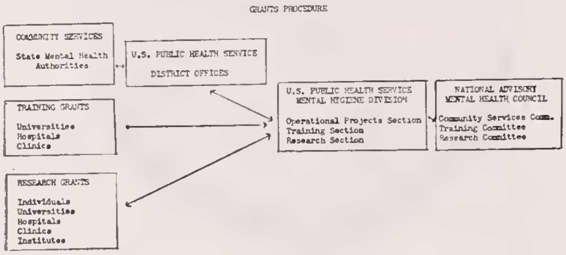
Slide No. 7


STATE MENTAL HEALTH AUTHORITIES
JANUARY, 1948
1
2
3
4
5
6
7
8
9
Department of MENTAL HYGIENE (7)
Department of HEALTH (32)
Department of WELFARE
OTHER Departments (6)
Department of HEALTH AND WELFARE (1)

Slide No. 8

I wish to emphasize that the physician who is not a specialist in the field of mental health has a great deal to contribute to the emotional well being of the people. The inter-personal relationship that exists between patient and physician to become actively engaged in the treatment of emotional disorders, especially those which accompany or are a part of somatic disease. No one is in a more advantageous position to become aware of and recognize the early evidence of mental illness. This assumes extreme importance when it is realized that the most effective period for the treatment of a mental disorder is in its early phases.

Since the National Mental Health Act has as its objective the aiding of programs at the state and local level, it seems appropriate to discuss it briefly at this time. Passed in 1946, it became activated by appropriations in July of 1947. Slide 9 is a summarization of the methods of procedure under the Act. From this slide you can see that the activities are divided into three general fields: 1) grants to the states, about which I have already talked; 2) training grants; and 3) research grants. Training grants, as you can see, are made to training centers by the Public Health Service when approval of the National Mental Health Council is obtained. The situation is the same with regard to research grants. The Council is made up of six outstanding authorities in the field of mental health. One other important activity which has not yet begun and is not shown on this slide is the establishment of a research hospital for mental illness at the National Institute of Health in Bethesda, Maryland. Other parts of this research hospital will have to do with cancer research and with research on cardiac and metabolic disorders. I think it is significant that research with regard to mental disease is gaining impetus during the past few years. Although one of the most devastating groups of diseases resulting in great economic losses, relatively little money has been spent on research with regard to its cause and treatment. During the year 1947-48, approximately $400,000 in research grants were made to institutions and individuals to carry on research. This is an amount which is almost exactly equal to the total amount spent by all others for research in the field of mental health during the same year.


GRANTS PROCEDURE
COMMUNITY SERVICES
State Mental Health Authorities
U.S. PUBLIC HEALTH SERVICE
DISTRICT OFFICES
TRAINING GRANTS
Universities
Hospitals
Clinics
RESEARCH GRANTS
Individuals
Universities
Hospitals
Clinics
Institutes
U.S. PUBLIC HEALTH SERVICE
MENTAL HYGIENE DIVISION
Operational Projects Section
Training Section
Research Section
NATIONAL ADVISORY
MENTAL HEALTH COUNCIL
Community Services Comm.
Training Committee
Research Committee

State and local mental health programs must, to be effective, be oriented in relationship to the needs of the individual in the communities. Every effort should be directed toward creating a healthy physical and emotional environment for young children so they may have opportunity to develop good personality structure. For those who require assistance, adequate out-patient treatment should be available. For those who must be hospitalized, there should be facilities that provide treatment, not merely custody.

"A medical school should assume a more active interest in the medical service which the public receives in a geographical area for which the school feels a responsibility," according to Dr. M. E. Lapham, dean of the Tulane University medical school.

Addressing about 50 doctors attending the North Mississippi Medical Society at the University of Mississippi Friday afternoon, Dean Lapham suggested sending medical school faculty members into the field as consultants to assist hospital staffs and practicing physicians with their peculiar problems.

"I would look forward to the time," he continued, "when certain hospitals or clinics in an area surrounding a medical school might be considered a part of a medical school system, or a part of a university system as affiliated teaching institutions."

The Mississippi Doctor

The journal with a vision which encourages a plan of delivering modern medicine to the masses at less cost to the individual and more profit to the practitioner. It champions the community hospital, the hub around which this service must be built.

Entered as second-class matter, January 19, 1926, at the post office at Booneville, Miss., under the Act of March 3, 1870. Annual subscription, $2.00.

Published monthly at Booneville, Mississippi.

W. H. ANDERSON, M.D. ....Editor-in-Chief
MILDRED P. ANDERSON ....Assistant Editor

David E. Guyton, Blue Mountain College......Poet

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L. L. McDougal, Jr., M.D. ....Tupelo, Miss.

Address all material for publication to W. H. Anderson, M.D., Booneville, Mississippi.

Editorials

We certainly appreciate the presence of Dr. Fishbein, editor of the **American Medical Journal**, at our state meeting. He is a master orator, always informative and inspiring.

Dr. R. B. Caldwell and Dr. B. B. O'Mara have been active during the year in the preparing the way for a good meeting for us at Biloxi. They have been keeping their fingers on our medical problems also and have done a good work. We should appreciate their efforts, not forgetting the fine work of the program committee, and give them a big attendance at the meeting.

Drs. Seale Harris of Birmingham, Ala., L. H. McDaniel of Tyronza, Ark., member of the Council, of the Southern Medical, and Mr. Loranz, business manager, are expected visitors.

We must not forget the good work of the Woman's Auxiliary in the field of education. It is most valuable.

The Fifty Year Club, which meets Tuesday, the first day of the Association, expects an increase in attendance. It is going to be fine to have Dr. Rudolph Matas of New Orleans, dean of our surgical world, master in versatility and eloquence, to pay a tribute to our beloved Dr. W. A. Evans. It will be one Barbashela paying homage to another departed, two masters who loved each other, and both saluted by a third, Dr. Seale Harris, who embodies the spirit of Southern medicine.

It is said that we now have seventy-five thousand empty beds in veterans hospitals, and yet the President advocates building fifty thousand more beds. This is bad economy from every standpoint. A large number of veterans should be allowed to go to their home doctor and to their home hospital as they would like to do and then let the government pay the bills. This would be a great help in financing our own home hospitals, it would help to distribute doctors, encourage them to locate in the small town and rural community, and it would be good economy for patient, doctor, hospital, and community.

The march of medicine has been marvelous since the days of Hippocrates, the father of medicine. It has been a march of free medicine. The United States has thus far taken the lead and shown the way. Regimentation, wherever it has been permitted, has had a checking influence on its progress. Free medicine thinks farther, deeper, and broader. Regimentation as a rule checks initiative on the part of the doctor, government subvention slows "healing" on the part of the patient, and weights the public to the breaking point with taxes. It would be an eating cancer to freedom and would place our government in the hands of the growing army employed by the government. It minimizes the importance of human personality and discounts personal effort. Socialized medicine would have a powerful influence in making our people mediocre and common, poor and dependent. Grants to poor areas to aid medical service, more and better public health, more and better hospitals aided by the state, nation, county, and philanthropy with the proper aid from the medical profession can save democratic medicine for the good of all.

The Academy of General Practice in our opinion is going to render a fine service in the interest of the people. Our state now has its organization, which is holding a meeting on Monday, May 9. Sections in pediatrics, obstetrics, and gynecology will meet the same day.

Every surgeon should plan to attend the Southeastern Surgical Congress on May 23, 24, 25, and 26 at the Buena Vista Hotel. It is an honor for our state to have this meeting, headquarters in Atlanta, its secretary-manager Dr. T. B. Beasley, and its president the fine, courteous and learned Dr. Gilbert Douglas of Birmingham assure us we will find no better surgical program than this.

Be sure to read the resolution for a four-year medical school recently passed by the Delta Medical Society, introduced by the able and dynamic Dr. Frank Acree, recent president of the Mid-South Postgraduate Medical Assembly. If the house of delegates of the Mississippi State Medical Association in no uncertain terms favors a four-year school, we are sure the appropriation will be forthcoming at the next meeting of the legislature less than one year hence. Let us not fail. We can not afford to. Mississippi can have the best practical medical school in this nation.

FROM OUR PRESIDENT-ELECT

B. B. O'MARA, M.D.

Our state medical meeting in May will go down in history as one of the most important, if not the most important, in the annals of our Association. The ever-present threat of socialized medicine will make it so.

The scientific program will rank among the best we have ever had and our guest speakers are all outstanding men.

The commercial exhibits will be displayed to better advantage than at any previous meeting. We will have some very fine scientific exhibits.

The new convention hall is ready, it is air-conditioned and modern in every respect.

Suitable trophies will be given the winners of the skeet shoot and golf tournament. Valuable entrance prizes will be given both doctors and wives Wednesday night at the banquet.

It behooves every member of the Association to be present this year, for the cloud of socialized medicine is heavy on our horizon. We need the advice and support of every doctor in the Association, if we are to do our part in repelling state medicine and keeping it a part of free enterprise as guaranteed us under our Constitution.

News and Comment

PROGRAM

Eighty-First Annual Session
Mississippi State Medical Association
Convention Hall, Buena Vista Hotel, Biloxi
Tuesday, Wednesday and Thursday,
May 10, 11, 12, 1949

Woman's Auxiliary Society
Buena Vista Hotel, May 10-12, 1949

Louisiana-Mississippi Ophthalmological and Otolaryngological Society
Buena Vista Hotel, May 9, 1949

Mississippi State Pediatric Society
Buena Vista Hotel, May 9, 1949

American Academy of General Practice of Mississippi
Buena Vista Hotel, May 9, 1949

OFFICERS 1948-1949

President—R. B. Caldwell, Baldwyn.

President-Elect—B. B. O'Mara, Biloxi; S. S. Kety, Picayune.

Vice-Presidents—O. G. Eubanks, Crystal Springs; J. G. Green, Tupelo.

Historian—J. G. Thompson, Jackson.

Editor—W. H. Anderson, Booneville; one year—John Archer, Greenville.

Associate Editor, two years—D. D. Baugh, Columbus.

Speaker of the House—J. Rice Williams, Houston.

Treasurer—E. LeRoy Wilkins, Clarksdale.

Secretary—T. M. Dye, Clarksdale.

COUNCIL

E. C. Parker, Chairman, Gulfport
H. C. Ricks, Secretary, Jackson

First District—1949—J. W. Lucas, Moorhead.

Second District—1949—L. L. Minor, R9, Memphis, Tenn.

Third District—1949—M. Q. Ewing, Amory.

Fourth District—1950—W. H. Curry, Eupora.

Fifth District—1950—H. C. Ricks, Jackson.

Sixth District—1950—Lamar Arrington, Meridian.

Seventh District—1951—T. E. Ross, Hattiesburg.

Eighth District—1951—A. V. Beacham, Magnolia.

Ninth District—1951—E. C. Parker, Gulfport.

LUNCHEONS

Tuesday, May 10, 12:00 Noon—Eye, Ear, Nse and Throat Luncheon.

Tuesday, May 10, 12:15 p.m.—Fifty-Year Club Luncheon (Olde English Room).

Wednesday, May 11, 12:30 p.m.—Past Presidents Luncheon.

GENERAL MEETING—FIRST DAY

Tuesday, May 10, 1949—Session 1:30 p.m. to 6:00 p.m.
Convention Hall—Buena Vista Hotel
Call to Order—President R. B. Caldwell.
Invocation—Rev. Thomas A. Carruth, Biloxi.

SECTION ON HYGIENE AND PUBLIC HEALTH

George E. Riley, Chairman, Jackson
Tuesday, May 10, 1949—Session 1:30 p.m. to 6:00 p.m.
Convention Hall—Buena Vista Hotel

1. The Experiences of a Pediatric Consultant in Public Health—Frank Tom Mitchell, Memphis.

Dr. Tom Mitchell was born in Memphis, graduated from the University of Tennessee, served his internship and residency in New York City and residency in Memphis City Hospital. He is visiting pediatrician at Baptist, Methodist, and Saint John hospitals in Memphis, chief of staff in pediatrics at John Gaston Hospital, professor of pediatrics at the University of Tennessee, and pediatric consultant for the Mississippi State Board of Health.

2. What Should Be the Syphilis Control Program of the Future?—A. L. Gray, Jackson.

3. Trends in Tuberculosis—C. C. Smith, Jackson.

4. Common Psychiatric Problems and Psychosomatic Disorders in General Practice—T. A. Watters, New Orleans.

Dr. Watters was born in Belcher, La. He was graduated from Tulane University. After two years internship he took his residency in New York City and in Baltimore. He studied under and worked with Dr. Adolph Myer, of Johns Hopkins University, the father of psychobiology. He took his psycho-analytical work in Chicago. He was formerly head of the Department of Psychiatry and Neurology at Tulane University. He is now engaged in the private practice of Psychiatry and neurology in New Orleans.

SECTION ON EYE, EAR, NOSE AND THROAT

Lynn D. Abernethy, Chairman, Jackson
Tuesday, May 10, 1949—Session 1:30 p.m. to 6:00 p.m.
Auxiliary Hall—Buena Vista Hotel

1. Congenital and Traumatic Vascular Lesions of the Eye and Adnexa—Kodachrome Clinic—Banks Anderson, Durham, N. C.

Dr. Anderson is Assistant Professor of Ophthalmology, in charge of surgery at Duke University Hospital.

2. The Frontal Sinus—A Problem in Diagnosis and Treatment—Lyle M. Sellers, Dallas, Texas.

Chief of Department of Otolaryngology, Baylor University Hospital.

3. Surgery of Horizontal Strabismus—Jack S. Guyton, Baltimore, Md.

A native Mississippian, Dr. Guyton is now Associate Director, Wilmer Institute Johns-Hopkins Hospital, Baltimore, Md.

Ten Minute Intermission.

4. Laryngofissure as an Important Aid in Diagnostic Problems—R. Hills McArthur, Jackson.

Discussion to be opened by R. P. Vincent and J. B. Donaldson.

5. Phlyctenular Keratoconjunctivitis — Wm. T. Wilkins, Clarksdale.

Discussion to be opened by H. K. Rouse and W. B. Holmes.

EVENING SESSION—EIGHT O'CLOCK

Tuesday, May 10, 1949—Convention Hall,
Buena Vista Hotel
The Public is Cordially Invited

1. Invocation—Rev. E. A. DeMiller, Biloxi.
2. Addresses of Welcome: On Behalf of the City of Biloxi—Mayor G. B. Cousins; On Behalf of the Coast Counties Medical Society—D. L. Hollis, Biloxi.
3. Response to Addresses of Welcome—D. S. Pancratz, University.
4. In Memoriam—By the Secretary.
5. Compulsory Medicine—Dr. Arthur L. Conrad, Chicago.

Dr. Conrad is an excellent speaker, his position with the National Physicians Committee having brought in him contact with doctors over the entire land. His services in informing the profession on the problems which confront it have been outstanding. Dr. Conrad is a definite highlight of the state program.

6. President's Address—Our Heritage and Our Future—R. B. Caldwell, Baldwyn.
7. Ewing Fox Howard Oration—Honoring Dan J. Williams—Henry Boswell, Sanatorium.

SECTION ON MEDICINE

J. T. Davis, Chairman, Corinth
Wednesday, May 11, 1949—9:00 a.m. to 12:30 p.m.
Convention Hall—Buena Vista Hotel

1. Brucellosis—Harry J. Schmidt, Biloxi.
2. Aureomycin—Leroy Brackstone, Corinth.

Discussion to be opened by L. L. McDougal, Jr., Tupelo.

3. Chills and Fever Versus Malaria—A. J. Walker, New Orleans.

Dr. Walker was born in Nova Scotia, and first saw malaria while in France as a technician with No. 1 Canadian General Hospital.

Upon graduation from McGill University, he pursued the disease, sometimes complicated by arrows of the Motilone Indians, across Venezuela to the Colombian border.

He studied tropical medicine in Germany and England, taught parasitology for one year in Liverpool, and later became research fellow and assistant director of a research laboratory in Sierra Leone (West Africa). It was there he described and named a fungus infection of anopheline mosquitoes.

Two years on a Liberian rubber plantation preceded his arrival at Tulane Medical School in 1943.

Now, as associate professor of Tropical Medicine in the Department of Public Health and Tropical Medicine of Tulane University, he propagates for therapeutic use the same disease he spent many years in the tropics trying to eradicate.

4. Hypertension: Its Medical Management—Preston S. Herring, Vicksburg.

Discussion to be opened by Gayden Ward.

5. Common Dermatosis Encountered in General Practice—James Grant Thompson, Jackson.

General discussion.

6. Present Day Status of Multiple Sclerosis—Guy H. Williams and Eric Bell, Cleveland, Ohio.

Dr. Williams is a native of Ohio, a graduate of Oberlin College and Western Reserve University Medical School. He is at present a staff member of the Cleveland Clinic in the Department of Neuropsychiatry, while retaining his status with the United States Naval Reserve, Medical Corps, as commander (active duty 1942-1946).

Dr. Eric Bell, an associate, is a graduate of Vanderbilt University, Nashville, Tenn., B.A., 1940, Vanderbilt School of Medicine, M.D., 1943.

Rotating Internship, City Hospital, Cleveland, Ohio, Apr.-Dec., 1943. Jr. Ass't. resident, neuropsychiatry, City Hospital, Cleveland, Ohio, Jan.-Sept., 1944, neuropsychiatrist, U. S. Naval Reserve, active duty, Oct., 1944-Sept., 1946; fellow in psychiatry, Cleveland, Ohio, Oct., 1946-Sept., 1947; fellow in neurology, Cleveland Clinic, Cleveland, Ohio, Oct. 1947-Sept., 1948; staff assistant, Dept. of Neuropsychiatry, Cleveland Clinic, Cleveland, Ohio, Oct.-Dec., 1948.

He is at present instructor in neurology and psychiatry, Frank E. Bunts Educational Institute, Cleveland, Ohio, and staff member, Dept. of Neuropsychiatry, Cleveland Clinic, Cleveland, Ohio.

7. Suggested Program for Better Distribution of Medical Service to the Public—Maxwell E. Lapham, New Orleans.

A New Yorker by birth, Dr. Lapham received his education in that state until he began the study of medicine at the University of Pennsylvania, receiving his M.D. from there in 1925. He is widely known throughout the South, and particularly in Mississippi where he was introduced in a two-year itinerary over the state as field instructor in obstetrics by the State Board of Health 1934-1936. In 1937 he went to Tulane University School of Medicine as assistant professor of Obstetrics; in 1940 he assumed the full professorship and became dean of the School of Medicine, which position he has held, concurrently with his service in the United States Naval Reserve 1941 to 1946 (captain).

SECTION ON SURGERY

T. E. Ross, Chairman, Hattiesburg
Wednesday, May 11, 1949—2:00 p.m. to 6:00 p.m.
Convention Hall—Buena Vista Hotel

1. Chest Injuries—Archibald C. Hewes, Gulfport.

Discussion to be opened by Geo. E. Twente and Eugene A. Bush.

2. Carcinoma of the Thoracic Esophagus and Upper Stomach—Willard H. Parsons, Vicksburg.

3. Hidden Genito-Urinary Conditions Parading as Abdominal Conditions—Theo. H. Hanser, St. Louis.

Dr. Theodore H. Hanser, B.S. and M.D., Washington University School of Medicine. Fellow of the American College of Surgeons. Interned at Augustana Lutheran Hospital, Chicago, Illinois, after graduation. In the service of Dr. Albert J. Ochsner. Then interned at Massachusetts General Hospital, following which he was associated with his uncle, Dr. Herman A. Hanser, in gynecology and abdominal surgery in St. Louis, Missouri.

The uncle, Dr. Herman A. Hanser, was assistant to Dr. H. S. Crossen, professor of gynecology at Washington University, and instructor in gynecology at Washington University School of Medicine.

Dr. Theodore H. Hanser was assistant in Medicine at Washington University School of Medicine 1925-1929. He was physician to Out Patients in Medicine, Washington University 1927-1931. At present he is on the staff at Lutheran Hospital, St. Louis, Missouri, and is limiting his work to diagnosis and surgery.

4. Common Sense in Surgery: A Hodge-Podge—Leslie V. Rush, Meridian.

Discussion to be opened by Augustus Street and John C. Culley.

5. Indications for Chemical and Surgical Interruption of Sympathetic Pathways—J. Harvey Johnston, Jackson.

Discussion to be opened by George H. Martin and C. L. Neill.

SECTION ON SURGERY

(Continued from Wednesday)
Thursday, May 12, 1949—9:00 a.m. until Completed
Convention Hall—Buena Vista Hotel

6. Abdominal Total Hysterectomy Versus Vaginal Hysterectomy—Wm. H. Brandon, Clarksdale.

Discussion to be opened by H. A. Gamble and J. K. Avent.

7. Regional Block Anesthesia in Surgery of the Extremities—Jack A. Atkinson, Brookhaven.

Discussion to be opened by Edwin E. Benoist and Martin L. Flynt.

PROGRAM
of the
Mississippi State Pediatric Society

Buena Vista Hotel, Biloxi, Mississippi
May 9, 1949

3:00 p.m.—"Intestinal Parasites in Children"—Paul C. Beavers, Ph.D., Associate Professor of Parasitology, Tulane University School of Medicine.

"Adenoids and Their Importance in the Growing Child"—Beach M. Chenoweth, Jr., M.D., Department of Pediatrics, Medical College of Alabama.

5:30 p.m.—Fellowship and Refreshment Hour.

6:30 p.m.—Banquet.

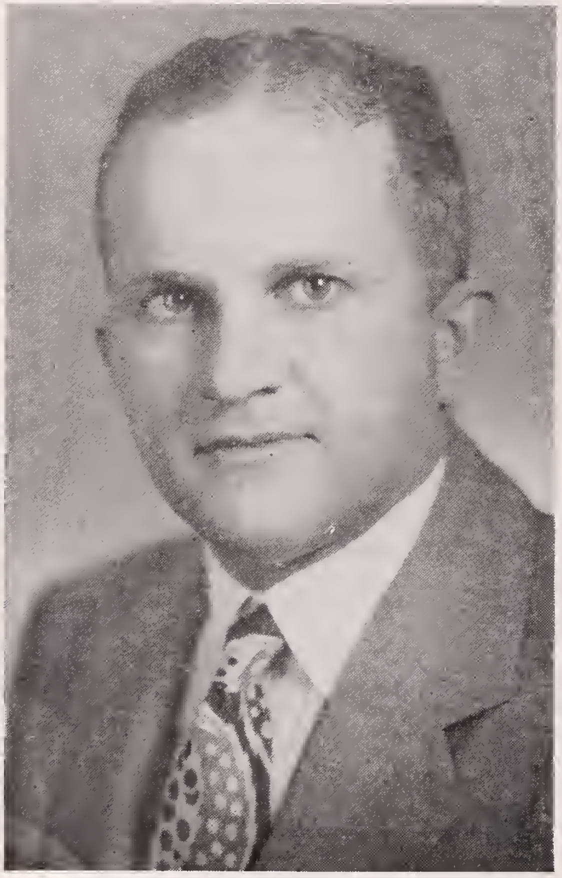
7:30 p.m.—"The Treatment of the Common Purulent Meningitides"—William A. Reilly, M.D., Professor of Pediatrics, University of Arkansas.

All physicians, regardless of type of practice, are cordially invited to attend and participate in this meeting, and attend the banquet.

MISSISSIPPI OBSTETRICAL AND GYNECOLOGICAL ASSOCIATION

May 9, 1949, Buena Vista Hotel

Guest Speaker



Dr. W. D. Beacham, M.D.
New Orleans, La.

Subject: "An Evaluation of Several Procedures Used in Gynecological or Obstetrical Practice."

ANNOUNCEMENTS

Dr. N. F. Holcomb, formerly of New Orleans, La., and Dr. F. M. B. Slater of Jackson and Vicksburg, Miss., are now associated in the Surgical Section of Drs. Gamble Brothers and Archer, Greenville, Miss.

Dr. H. Earle Conwell announces the opening of his offices February 1, 1949, 811 South 20th St., Birmingham, Alabama, practice limited to fractures and other orthopaedic conditions.

SOUTHEASTERN SURGICAL CONGRESS

May 23, 24, 25, 26

Biloxi, Mississippi

GILBERT F. DOUGLAS, M.D., PRESIDENT

Dr. Douglas came near being a Mississippian by adoption, a part of his education having been obtained in Meridian, as well as his hospital training there at the East Mississippi Insane Hospital, followed by a short practice at Newton. He married a Mississippi girl, the former Miss Mary Rachel Griffin, daughter of a Methodist minister. Birmingham beckoned for her talents early in his career, and many have been his connections and contributions there. His activities beyond his specialty of gynecology and obstetrics have ranged from a service career (major in World War I) to numerous medical affiliations, and promoter of the Medical College of the University of Alabama. He is associate professor of gynecology at the University of Alabama, past-president and chairman of the Council.

SECRETARY

B. T. Beasley, M.D., Atlanta

The Southeastern Surgical Congress comes to Mississippi for its seventeenth postgraduate assembly on May 23, 24, 25, and 26, at the Buena Vista Hotel, Biloxi, Eminent men from eighteen states are scheduled to address the assembly in perhaps the best program ever arranged by the program committee. The affable, progressive president, Dr. Gilbert F. Douglas of Birmingham, Ala., cordially invites Mississippi physicians to attend.

RESOLUTION

At the regular semi-annual meeting of the Delta Medical Society held at Greenville, April 13, 1949, the following resolution was introduced by Dr. F. M. Acree, who moved its adoption. It was seconded by Dr. G. Y. Gillespie of Greenwood and unanimously passed by the society as a whole.

WHEREAS, Mississippi is now taking a leading part in the National Community Hospital Construction Program to provide better medical care for all the citizens of the state, especially the rural citizens, and

WHEREAS, there is included in the State Hospital Plan 5,000 additional new hospital beds to be built in addition to the 4,000 beds now in operation in the state, and

WHEREAS, the hospitals now authorized and under construction will provide for approximately 75 per cent of the rural hospital needs of the state, and

WHEREAS, seven regional hospitals of a minimum of 100 beds or more have had funds granted and will soon be under construction at Clarksdale, Greenville, Greenwood, Tupelo, Gulfport, Hattiesburg, and Laurel, and

WHEREAS, this new hospital development in the state will require additional physicians, surgeons, and medical personnel and will provide for additional internships and residencies in the state, and

WHEREAS, it appears that the present medical shortage is likely to grow worse, and

WHEREAS, a single, central hospital is needed to be located near the central portion of the state to serve as a base hospital for major surgery, specialized medicine, heart clinics, cancer clinics, orthopedic clinics, pediatrics clinics, medical teaching, and medical research, and

WHEREAS, it will require approximately one and one-half to two years to draw up the blueprints, plans and specifications for such a central base hospital, and

WHEREAS, the additional time required for construction and equipping of the hospital will be approximately one and one-half years, and the hospital will not be available under any circumstances in less than three or four years, and

WHEREAS, the state now has only a two year medical school and is entirely dependent on other schools in the United States for junior and senior instruction,

NOW, THEREFORE, since it appears that a central base hospital is urgently needed and planning for such a hospital should begin immediately, provisions should be made for a medical center in which the Veterans Administration could participate with a minimum of 500-bed hospital; private physicians and private clinics could participate; and the State Board of Health hygienic laboratory and administrative offices, the Hinds County Health Department, and other public and private medical facilities could be properly located. It is resolved that the State Medical Association go on record as sponsoring and endorsing a central teaching hospital to be constructed at Jackson, Mississippi; it is further resolved that a site therefore be secured immediately, and that proper technical experts such as architects, engineers and landscape architects be employed to draw up a proposed layout for a central teaching hospital and work out its relation to the medical group, of which it will be the chief institution and that the governor of Mississippi, the Building Commission, the Commission on Hospital Care, the Board of Institution of Higher Learning, the University of Mississippi, and the legislature be requested and urged to take such action immediately as will initiate planning and carrying through to success and properly construct, equip, and locate a central base hospital for Mississippi, and that a committee be appointed by the president of the Mississippi Medical Association to promote the above program.

FOR SALE: My practice and office equipment, which includes 100-100 Keleket X-ray, Diathermy, Ultra-Violet, E.K.G., laboratory, and a 4-bed obstetrical clinic, all furniture of steel, beds double crank. Dewitt is a town of 3500 population with the rice mills, several small sawmills, two cotton gins and surrounding territory with rice farms, cotton farms and timber.

I have practiced medicine in this locality for thirty-five years and want to retire due to my health. Homer Dickens, M.D., Dewitt, Arkansas.

FOR SALE: Nine Room Clinic with or without equipment. Located in one of the fastest growing cities of 20,000 population. A very good opening for internal medicine, a good man can gross twenty to thirty-five thousand per year. Don't apply unless you mean business. P. O. Box 357, Blytheville, Arkansas.

BOOK REVIEWS

Advance in Military Medicine, edited by E. C. Andrus, D. W. Bronk, G. A. Carden, Jr., M. C. Winternitz, J. S. Lockwood, J. T. Wearn and C. S. Keefer. Two volumes, price $2.50.

Part One of Volume I deals with infectious diseases, containing a world of information on how these diseases are contacted and new methods of treatment. The advance in the treatment of venereal disease is interesting

Included are new tropical diseases that were encountered in World War II, vaccines and serums that were used are with startling results, as well as new methods of dealing with convalescence, this period being greatly shortened. Physical therapy and occupational therapy are discussed.

Wonderful strides during the war were made in surgery. A number of special problems came up for study, the nature, prevention and treatment of frostbite and trench foot resulting from overexposure, the development of new and better surgical sutures, improved material for controlling hemorrhage and devices for x-ray photography that would eliminate guesswork in the production of high quality films. Each of these problems was taken up by one or more teams of investigators, with results of immediate practical significance that are discribed in the various chapters on surgery.

Progress in the field of aviation brought new medical problems. Probably the most significant fact was the revelation of unnecessary structural characteristics that were frequently responsible for injury. Safety apparati were improved and strengthened. Dummy pilots were used and many experiments were made. From these and similar studies there began a movement for greater safety in aircraft which is continuing into the peacetime aerial age.

A wide range of subjects were covered in the investigation of the field of physiology. Shock was one of the major problems in World War I. Several outstanding men in America and England were selected to study the subject. Blood plasma given by the Red Cross made possible many studies of the fractionation of human plasma. Mass surveys were made on nutrition of troops in various theaters of war. Troops were equipped, trained and conditioned for any climate. Investigation for the first time was made on the effects of hot and cold weather clothing on the physiology of man. A fascinating history of plasma fractionation is given.

Volume II. The problems of nutrition, acclimatization to heat and cold are continued from Volume One. Protective clothing is discussed at length.

The University of Southern California made an intensive study of sterilization of water in canteens. Columbia University made a study of the fundamental biochemistry of water disinfection. Harvard University made a study of water disinfection and allied subjects.

The chapter on chemical warfare agents gives detailed reports on all poison chemicals used in both wars. Antidotes were studied and manufactured for all these.

One chapter by Alfred Gillman and McKeen Cattell deals with systemic agents—action and treatment. One very interesting chapter in respiratory irritants, drugs, their action and the diseases treated by them are discussed.

STATEMENT

Ten years ago, a group of officers and fellows of the American Medical Association realized that the American Medical Association was not as active in certain functions as was deemed necessary, some of which seemed at that time inappropriate for the American Medical Association to perform. As a result, the National Physicians Committee for the Extension of Medical Service was created and has worked during these intervening years within the policies established by the House of Delegates of the American Medical Association.

Two years ago, a Committee of the House of Delegates reported that "the American Medical Association should and must do its own public relations work."

In December, 1948, the House of Delegates took action to create a new agency to carry on public relations activities and to further the extension of medical care. This new agency has been created and is functioning. The program as planned and now being carried on by the American Medical Association represents the fulfillment of the objectives for which the National Physicians Committee was created and toward which it has been working.

During its ten years of activity, the National Physicians Committee has brought about the formation of forty-seven state committees of physicians and forty-six state committees of dentists, in addition to other local organizations, that have functioned vigorously and well. The Board of Trustees now suggests to the physicians making up the personnel of these state committees that they offer their services to the new American Medical Association agency.

Edward H. Cary, M.D., Chairman
N.P.C. Board of Trustees

Interpreting Medical Literature

PEDIATRICS

A STUDY OF THE CAUSE OF FETAL AND NEONATAL MORTALITY ON THE OBSTETRIC SERVICE OF BELLEVUE HOSPITAL—John S. Labate, Bellevue Hospital and New York University, New York, N. Y.—Am. J. Obst. and Gynec. 54-188-200, August 1947.

"On the basis of 868 autopsies performed during the ten year period 1933 to 1943, the four major causes of fetal and neonatal death were found to be prematurity, pulmonary lesions, birth trauma, and antepartum or intrapartum fetal death, often of unknown cause.

Prematurity was found to be the greatest single cause of death. In 27.6 per cent fetal death occurred because the vital organs were insufficiently developed to maintain life. In order to reduce the mortality rate from prematurity it is necessary to provide for careful and adequate attention by trained personnel before, during, and after delivery. Measures which are of value in lowering the death rate from prematurity include delaying the onset of labor as long as possible, avoidance of excessive sedation or oxytoxics, and avoidance of artificial rupture of the membranes. The second stage of labor should be shortened and the strain on the fetal head should be eliminated by performing an episiotomy. Immediately after delivery, energetic measures must be taken to initiate respirations. The most important of these measures is adequate aspiration to ensure an unobstructed flow of air to the lungs.

Pulmonary lesions accounted for 22.5 per cent of the deaths and these constituted the commonest cause of death in the term infants. Aspiration of amniotic fluid, detected by the microscopic finding of epidermoid cells, debris and meconium droplets within the alveoli, was the lung lesion most frequently demonstrable at autopsy. (60.2 per cent). Aspiration of amniotic fluid occurs during intrauterine life as a result of fetal anoxia. A fetus showing signs of intrauterine distress should be delivered as soon as conditions permit, compatible with the safety of the mother.

Pneumonia was the second most frequent type of lung lesion encountered at autopsy, 27 per cent. The types of pneumonia were found to fall into three groups: (1) congenital pneumonia, developing during intrauterine life as the result of aspiration of infected amniotic fluid, usually as a sequel to premature rupture of the membranes. This is the type of pneumonia most frequently seen in the term infant; (2) aspiration pneumonia resulting from inhalation of vomitus or food and most frequently seen among the premature infants; (3) pneumonia of bacterial origin. Massive hemorrhage was the third most frequently encountered lung lesion, 10.2 per cent. Such hemorrhages may occur if respirations are initiated while the head is in the vaginal passages, or from energetic attempts at resuscitation. The third largest cause of death was from birth trauma, 16.9 per cent. The types of injuries encountered were found to fall into three main groups: intracranial, spinal and intraabdominal. The intracranial injuries consisted of laceration of the dural septa and bubdural hemorrhages. These were most commonly found in the term infant and were usually related to the performance of a difficult operative delivery. Subarachnoid and ventricular hemorrhages were commoner in the premature infants.

A large group of infants, 16.5 per cent, were macerated. In over one-half of these, no maternal cause for death of the fetus could be determined. Toxemia was the most frequent maternal complication, 21 per cent. Vaginal bleeding, most frequently due to premature separation of the placenta, was the complicating factor in 11.8 per cent."

COMMENT: This is a most interesting and illuminating article. The subject is one in which most of us should be very much interested. Certainly the prevention of prematurity is the most outstanding contribution to the solution of this problem as it relates to prematurity. All physicians who are doing obstetrics should look well into the prevention of prematurity since this is where we get a major portion of our mortality rate in these cases.

State Board of Health

Felix J. Underwood, M. D.

A Short Summary of the Viral Encephalitides

by
Maynard H. Mires, M.D.
Epidemiologist

The subject of the viral encephalitides has developed almost entirely within the past few years, and more and different viruses are being isolated from time to time. As physicians throughout the world become more acutely aware of its presence, encephalitis apparently becomes more prevalent, and rises accordingly to a level of importance.

In a discussion of encephalitis, probably encephalomyelitis would be a more accurate term to use, since inflammation of the brain is usually accompanied by inflammation of the spinal cord as well. Such a designation has for its basis the location of pathologic changes and is preferred to the words encephalitis or myelitis being preceded by polio or leuko (depending on whether the gray or white matter is most affected).

Hence we see as the purpose of a summary of this type a reminder to physicians of our state of the imminent danger we face, believing that an everwatchful medical profession will act as the first bulwark of defense. The U. S. Public Health Service has recently made investigations of encephalitis outbreaks in neighboring states, so it is reasonable to assume that Mississippi may be next in line. Hamilton County, Tennessee, reported a total of six cases among members of a football team, who developed severe paralyses and presented the general picture of St. Louis Encephalitis. Livingston, Alabama, reported about 150 cases of the same disease. Burke County, Georgia, has been concerned because of cases of equine encephalitis occurring in this area. Louisiana has several areas where epidemics of equine encephalitis occur every year.

The viruses with which we are concerned here are the neurotropic ones, confining their insidious activities to nervous tissue alone. There are varying degrees of neurotropism, so that we must distinguish between the highly neurotropic viruses (those of poliomyelitis and rabies) and the ordinary neurotropic viruses (those causing equine and Japanese B encephalitis). Highly neurotropic viruses are found primarily in the nervous system, and seldom if ever in other tissues, blood, secretions, etc.

In 1948 only eight cases of encephalitis were reported in Mississippi by practicing physicians, but there were probably many more unreported. Obviously it is of the utmost importance that all suspicious cases be investigated. A search of the death certificates reveals two deaths last year from this disease, both in Tate County, and in middle-aged negroes.

The clinical picture of encephalitis depends primarily upon the areas of the central nervous system involved instead of upon the kind of virus. While a definite clinical picture may be found during an epidemic, one may encounter great difficulty from the clinical picture alone in diagnosing the kind of encephalitis virus responsible for the outbreak. Workers in the laboratory are, therefore, called upon to identify the causal agent.

(1) Encephalitis lethargica

(von Economo's Disease)

Formerly known as Epidemic encephalitis, this disease is probably infectious and characterized by a wide variety of signs and symptoms in different individuals. It is often associated with ophthalmoplegia and residual parkinsonism, and occurs chiefly in the spring and winter months. The precise incubation period is unknown, but it is assumed to be from four to fifteen days. There is a brief initial stage with fever, meningeal irritation, drowsiness, and ocular paralyses. Other symptoms may develop, such as rigidity, paralyses of other members and psychotic disturbances. The psychotic patients may show anything from simple mental impairment to signs suggestive of general paresis or schizophrenia.

Of importance is the fact that in the course of an epidemic a large number of patients may have no complaints at all. In such a case, the first intimation of encephalitis may be residual parkinsonism.

The blood count is of very little help. The cerebrospinal fluid is usually clear and shows lymphocytosis, normal or slightly increased amounts of sugar and a slight increase in protein. It must be emphasized that the fluid is often completely normal.

The cause of Encephalitis lethargica is still unknown, even though its general aspect is that of a viral infection. We have no laboratory tests available as present for specific diagnosis. Because of its occurrence in the colder months, its spread is probably not dependent on insects. Some observers believe that the disease may be spread by contact or droplet infection. People of all ages are susceptible to attack, but most patients are under 40 years of age. Twenty-five per cent of all cases occur in youngsters between the ages of 10 and 20. The incidence is slightly higher in males than in females. The average mortality rate is thirty per cent. Residual symptoms occur in twenty per cent of patients. At present, no one knows how to prevent the spread of the disease in a population.

(2) St. Louis Encephalitis

Both endemic and epidemic in central and western United States, this form of encephalitis prevails in the summer and is caused by a specific virus. It differs in many respects from Encephalitis lethargica, but is similar in certain respects to the western type of equine encephalitis and to Japanese B encephalitis, two of the so-called summer encephalitides.

After an incubation period of 4 to 21 days, the disease develops and presents a clinical picture of rapidly-rising fever (as high as 105 or 106), gastro-intestinal disturbances, headache, vertigo, nuchal rigidity, Kernig's sign, lethargy, ataxia, difficulty with speech, mental confusion and tremors. Paralyses are not common and when they occur, are of the spastic type; ocular muscles are as a rule spared.

Convalescence requiring months in severe cases and weeks in milder ones is the rule. Recovery in the older age group is usually complete. Less than 5 per cent of the survivors have sequelae such as muscle tremors, weakness and mental impairment. Parkinsonism is rare.

Blood counts as a rule exhibit 10,000 to 14,000 white cells with a shift to the left in the polymorphonuclear elements. The spinal fluid is clear, under slight pressure, and with pleocytosis, up to 300 cells or more, lymphocytes and monocytes predominating. The protein is slightly increased while the sugar is normal.

As for the isolation and identification of the virus, the active agent has not been recovered as yet from the spinal fluid of human beings, and is found only with great difficulty in the blood. Therefore, for all practical purposes it is not worth-while looking for the virus in these materials. If a patient dies and autopsy is performed, a search for the virus in the brain and spinal cord is made.

Chief vectors of the disease as it exists in America are **Culex tarsalis** and **Culex pipiens.** The seasonal activity of these mosquitoes correlates with the season of human epidemics, and no other mosquitoes have shown such a correlation.

The close similarity between St. Louis encephalitis and western equine encephalitis in respect to clinical, pathologic and epidemiologic phenomena is worth noting. Both viruses are found in **Culex tarsalis** and can be passaged in the laboratory by means of this mosquito. Both viruses infect horses but have no effect on other vertebrates. Both viruses are found throughout central and western United States. And finally, both viruses cause disease in human beings in summer and may operate together in the same area.

Immunization by means of a vaccine consisting of formalin-inactivated virus has not yet had an adequate trial in human beings. In one small series of tests, however, it caused the appearance of neutralizing antibodies in human serum. This vaccine, needless to say, is not available for general use. A logical program for the protection of individuals and communities should necessarily include plans for the control of implicated mosquitoes.

(3) Japanese B Encephalitis

Because of its chief prevalence in the Far East, especially on the Japanese mainland, this disease should not give us much concern here. It is characterized by varied clinical pictures, diffuse neuronal necrosis, and inflammation of the brain and cord. In view of the fact that von Economo's Disease has occurred in Japan, it is designated by the Japanese as type A to distinguish it from their type B.

After an incubation period of about a week the prodromal signs of anorexia, nausea, headache, fever and nervousness occur and last for one to four days. The onset may be sudden or gradual and is characterized by fever, vomiting and apathy, which may turn into mental confusion or disorientation, lethargy or even coma. the fever of 104° F. or higher reaches its height within the first day or two after the onset. It then continues for about five days when it falls by lysis. With the febrile reaction there is commonly an associated nuchal and spinal rigidity, spasticity of the legs, disturbed deep and cutaneous reflexes, difficulties of speech, tremors, convulsions and paralyses. About thirty per cent of patients have either spastic or flaccid paralysis of the limbs. In some, the paralysis involves the facial muscles. Sensory and psychic disturbances may arise. The acute phase lasts from a few days to two weeks or longer, depending on the severity of the attack. In mild cases the neurologic and psychotic signs are less marked. When recovery follows an attack, it is usually complete.

During the acute phase the white blood cell count shows a moderate polymorphonuclear leukocyte increase, with a shift to the left; the average white blood cell count is 10,000 to 25,000 or higher. The cerebro-spinal fluid as a rule is clear; the pressure is slightly increased and pleocytosis, to 250 or more cells, chiefly of lymphocytes is present. Early in the course of the disease, polymorphonuclear cells may be found in the fluid. The protein content is somewhat increased, but the amount of sugar is usually normal.

The disease arises in epidemic form during the warmest season of the year and the greatest number of people attacked is usually in older age groups. Over sixty per cent of all cases occur in those over fifty years of age and among them the mortality rate is 65 to 80 per cent. Males are more often attacked than females.

Certain culicine mosquitoes seem to be the vectors, and thus their control is of the utmost importance in endemic areas. Prevention by use of specific antiserum has not yet been applied to man, although hyperimmune serum prepared in horses has been found to be effective in experimental animals. At the present time a mouse-brain vaccine and a chick-embryo vaccine are being tested in the field to determine their ability to protect human beings.

(4) Western Equine Encephalitis

Primarily a summer viral disease of lower animals, especially of horses and mules, it is also transmissible to human beings in whom a malady is produced closely resembling that of St. Louis Encephalitis. At the present time there exists an endemic focus along our Pacific coast.

The incubation period is from about five to ten days, at the end of which time patients exhibit prodromata of headache, drowsiness, fever and gastro-intestinal disturbances. Then suddenly fever appears with neurologic signs and symptoms which consist of severe headache, insomnia and marked pain in the muscles, especially in those of the back. Lethargy, disturbances of speech, ataxia, nystagmus, tremor convulsions, mental confusion, amnesia and even coma may supervene. Paralysis is not common, occurring in about fifteen per cent of those attacked. Ophthalmoplegia and ptosis are still more uncommon. The acute febrile phase endures from seven to ten days. Most patients recover completely; residuals such as parkinsonism are rare.

The white blood cell count exhibits as a rule a slight polymorphonuclear leukocytosis; the total count ranges from 10,000 to 16,000. The cerebro-spinal fluid shows a pleocytosis of ten to more than four hundred cells. Early, polymorphonuclear leukocytes are in evidence but about three days after the onset mononuclear cells begin to predominate. Protein is usually increased and sugar may be slightly increased or normal in amount.

As with the other forms of encephalitis, there is no specific treatment.

Once again, the vector is considered to be culicine mosquitoes and their control will probably affect the incidence of this disease.

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STATE PROGRAM

Buena Vista Hotel

Tuesday, May 10, 8 a.m.—Registration.

9 a.m.—General Session, Guest Speaker, Mrs. Joseph Kelso, Oklahoma City, Okla., President of the Auxiliary to the Southern Medical Association.

12:30—Luncheon, Guest Speaker, Mrs. Luther Tice, Long Island City, N. Y., President of the Auxiliary to the American Medical Association.

Wednesday, May 11, 9 a.m.—General Session.

12:30—Luncheon Honoring the Doctors, Guest Speaker, Dr. Morris Fishbein, Editor of the Journal to the American Medical Association.

The above is a skeleton of the two-day session planned this year for the state meeting. Our charming president, Mrs. J. K. Avent of Grenada, assisted by Mrs. O. C. Raines of Gulfport, the secretary, will preside at all meetings. Especially noteworthy is the announcement of the two luncheons—the one on Tuesday is the annual Auxiliary luncheon, while the one on Wednesday is arranged by the Auxiliary for the doctors. Members, this is to be an important occasion, attended by several notables and addressed by Dr. Morris Fishbein. Mrs. Fishbein will also be an honor guest.

Doctors' wives have an important role to play in being balanced and understanding interpreters of the uncertain and changing pattern of our professional life. They need more than ever to keep enlightened and in close touch with their local and state organizations, informing themselves on the trends and movements that are threatening the entire structure of our professional life.

Be at the state meeting in Biloxi!

LOWNDES COUNTY AUXILIARY

Mrs. James F. Lewis, elected last year as the president-elect of the Woman's Auxiliary to the Lowndes County Medical Society, succeeding Mrs. W. R. Duke, assumed her duties as the new president of the group at a luncheon meeting held in the Gardenia Room of the Gilmer Hotel on April 15.

The new officers who will serve with Mrs. Lewis through the 1949-50 season are: Mrs. D. D. Baugh, president-elect; Mrs. H. H. McClanahan, Jr., secretary, and Mrs. W. L. Stallworth, treasurer.

The Auxiliary will again help with the annual cancer finance campaign by sponsoring "Coffee Day." Mrs. Lewis appointed Mrs. E. Q. Withers chairman and Mrs. A. E. Brown to contact restaurants asking their participation.

Mrs. W. R. Duke introduced the speaker for the meeting, Mrs. J. F. McDougal, supervisor of special services with the Mississippi Society for Crippled Children. This society is solely supported by the sale of Easter Seals. Its purposes are: 1) education for handicapped children; 2) help for home-bound cripples, and 3) a camping program for crippled children.

Mrs. J. H. White served as hostess for the meeting.

The flowers on the luncheon table were an arrangement of pink gladioli. There were three guests present and fifteen members.

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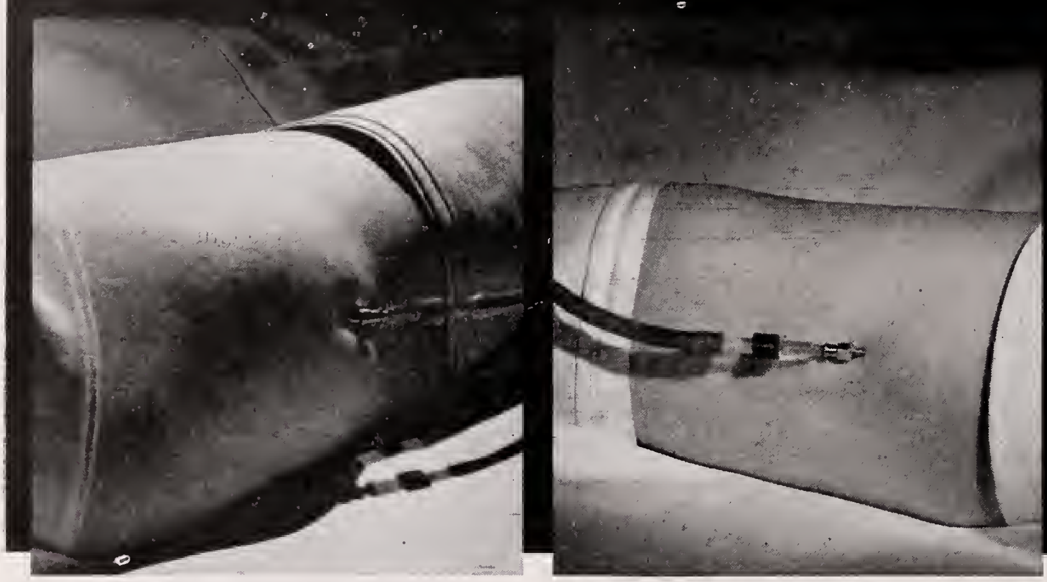

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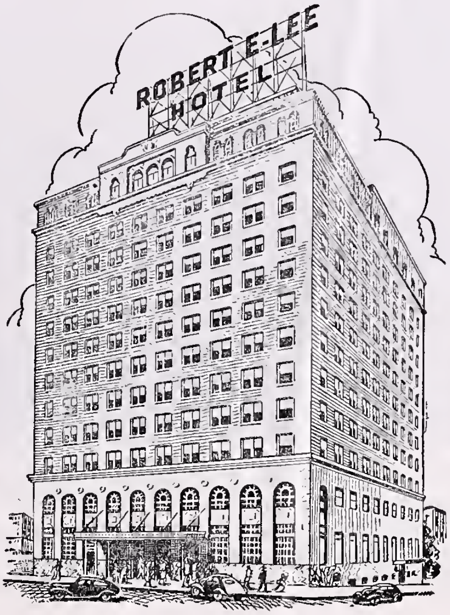

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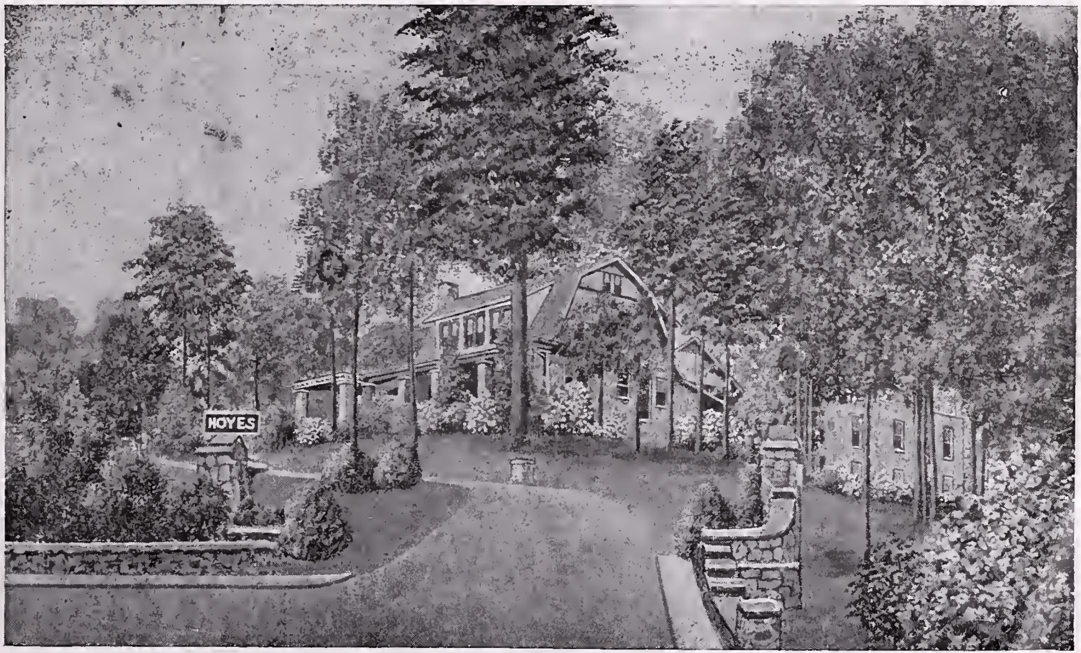

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